

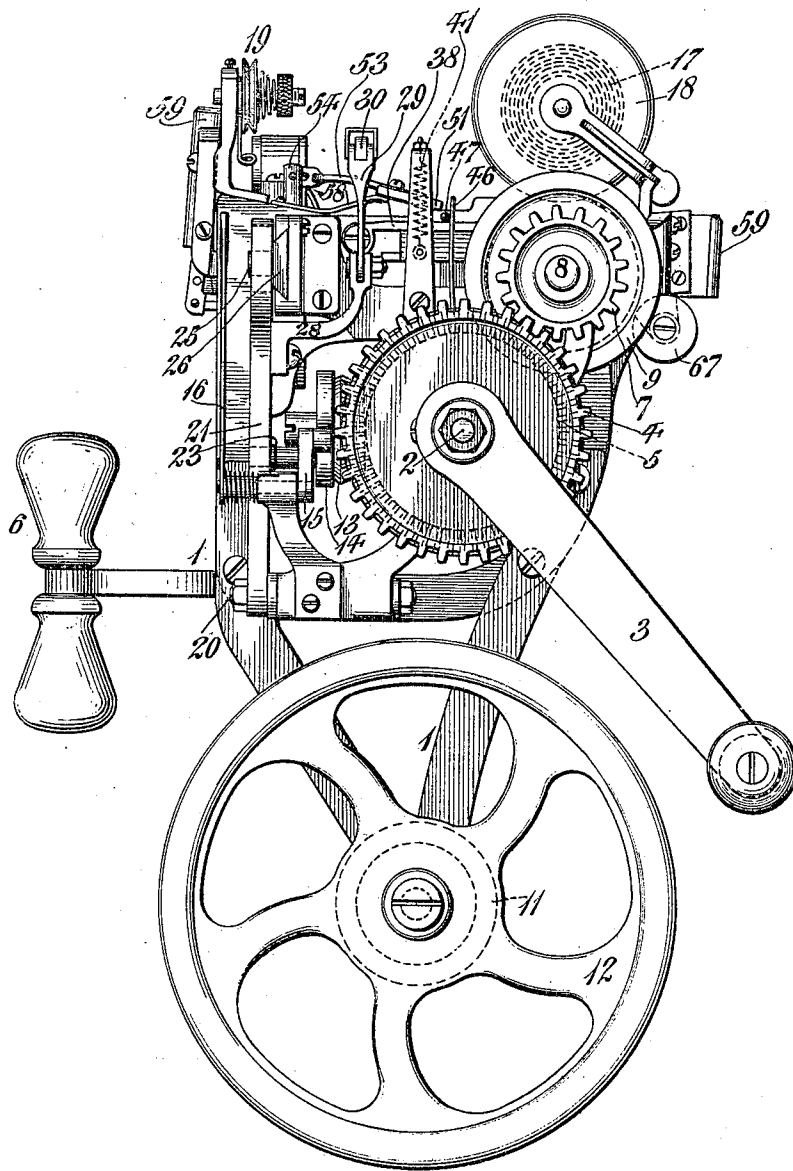
No. 838,332.

PATENTED DEC. 11, 1906.

J. H. HOOD.
CARPET SEWING MACHINE.
APPLICATION FILED JULY 18, 1905.

7 SHEETS—SHEET 1.

Fig. 1.



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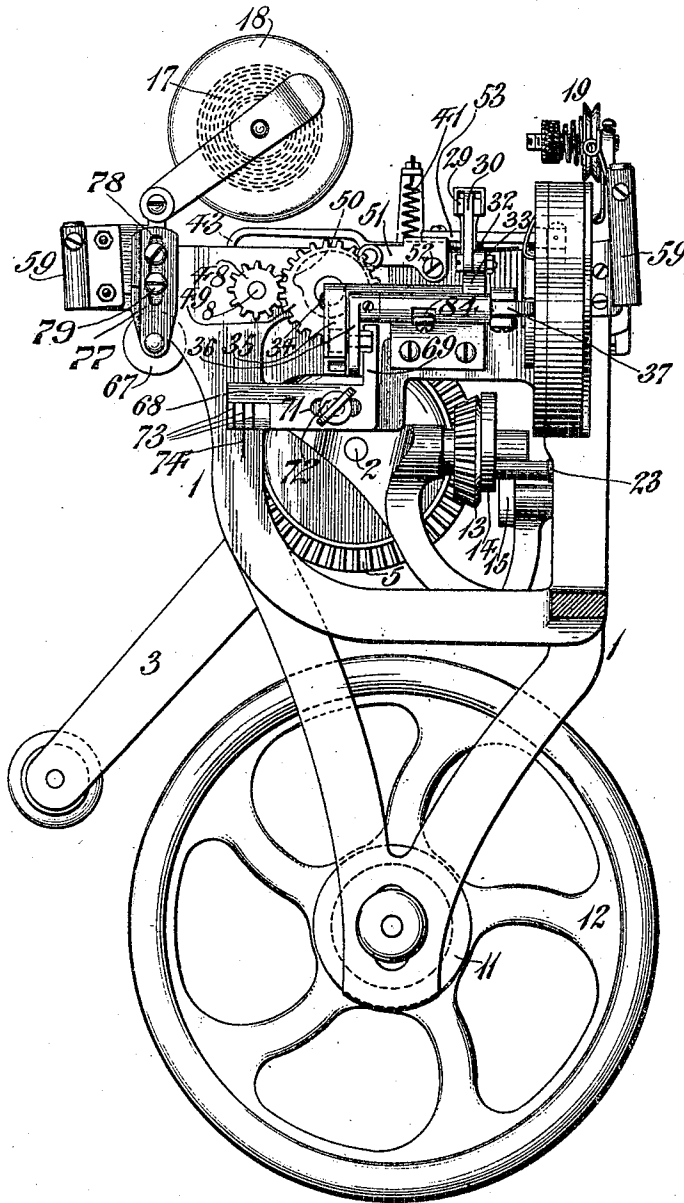
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7 SHEETS—SHEET 2.

fig. 2.



Witnesses
L. Rouville,
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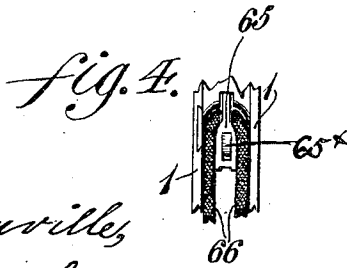
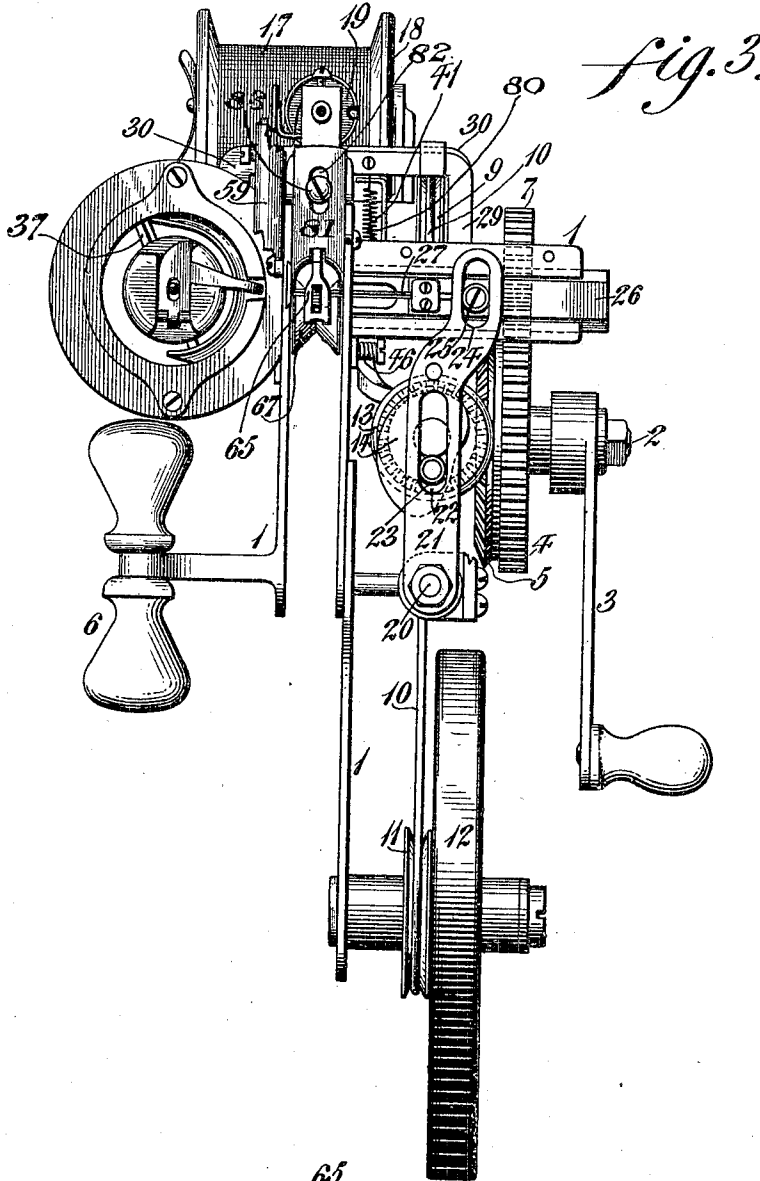
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7 SHEETS—SHEET 3.



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7 SHEETS—SHEET 4.

fig. 5.

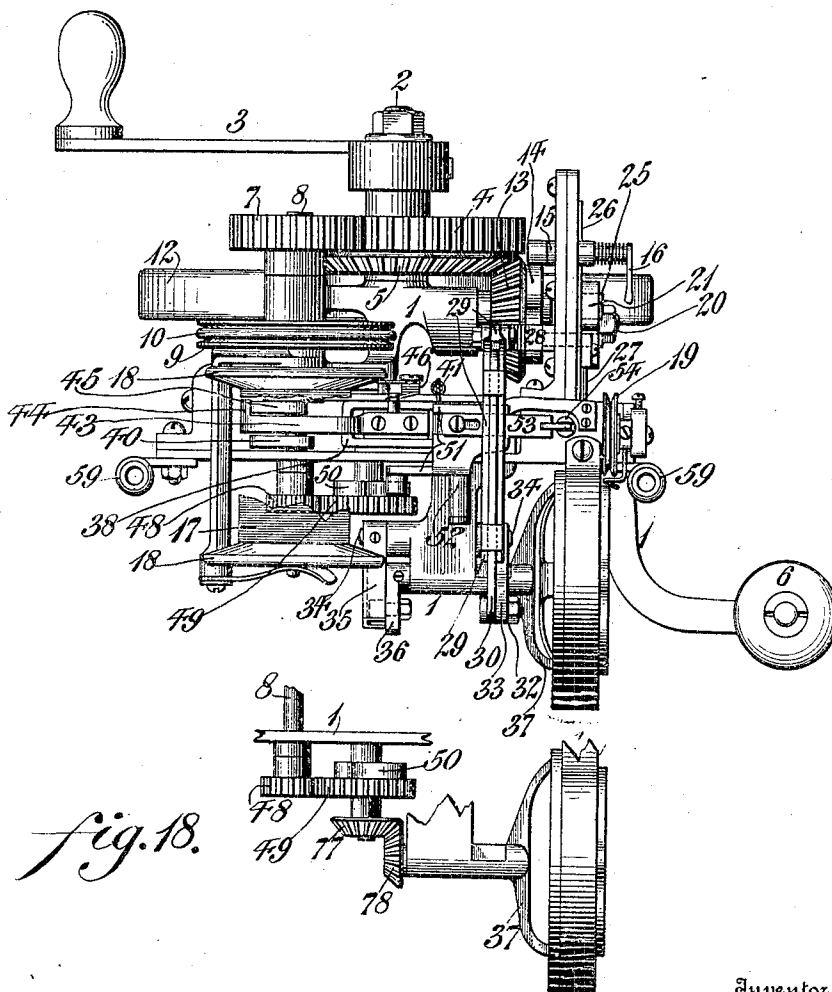


fig. 18.

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7 SHEETS—SHEET 5.

fig. 6.

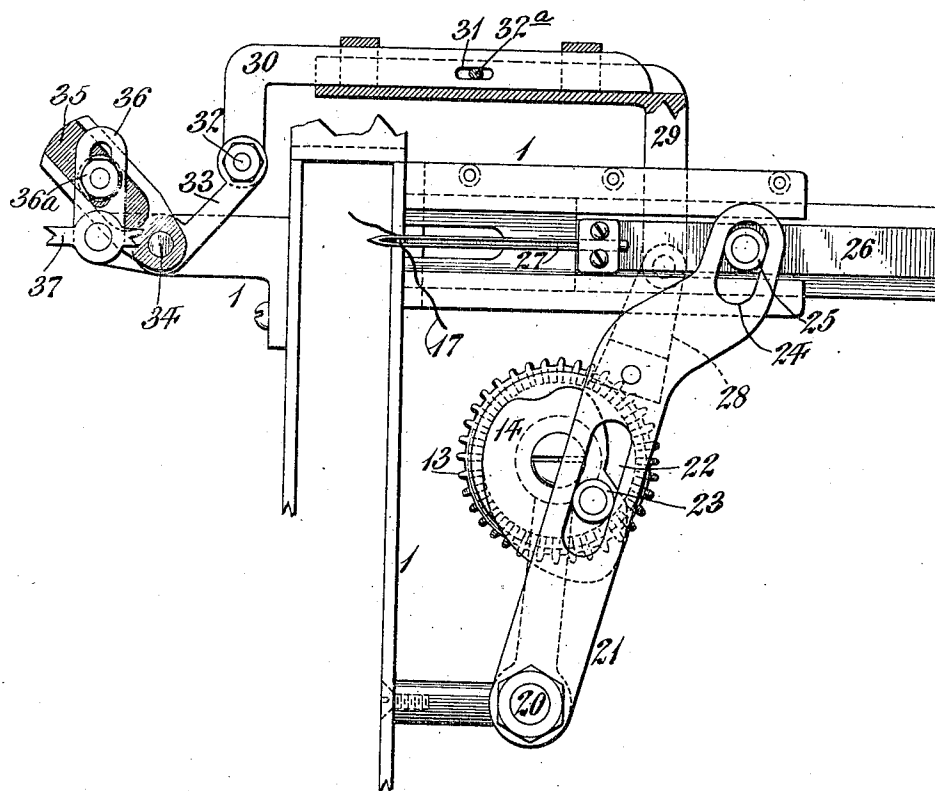


fig. 7.

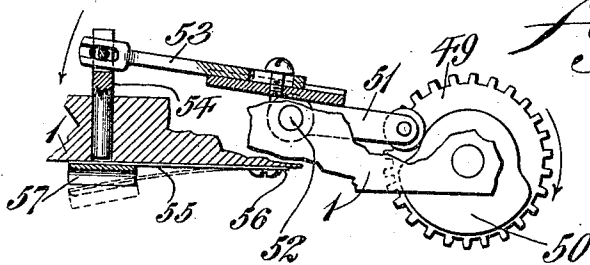


fig. 9.

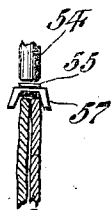
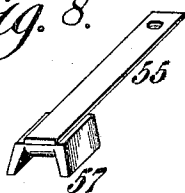


fig. 8.



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APPLICATION FILED JULY 18, 1905.

7 SHEETS—SHEET 8.

fig. 10.

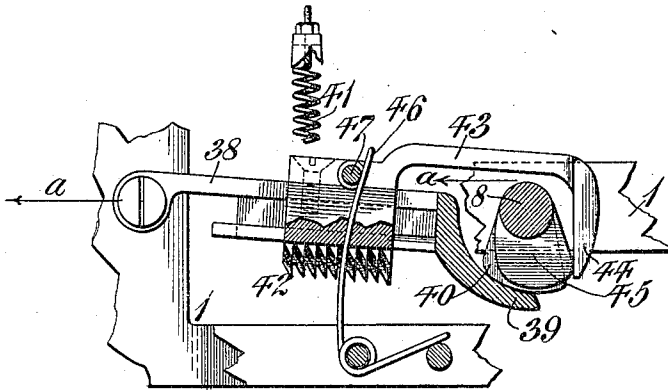


fig. 10b.

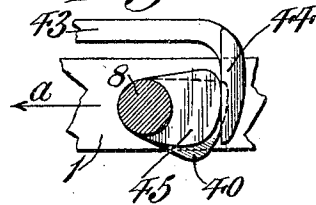


fig. 11.

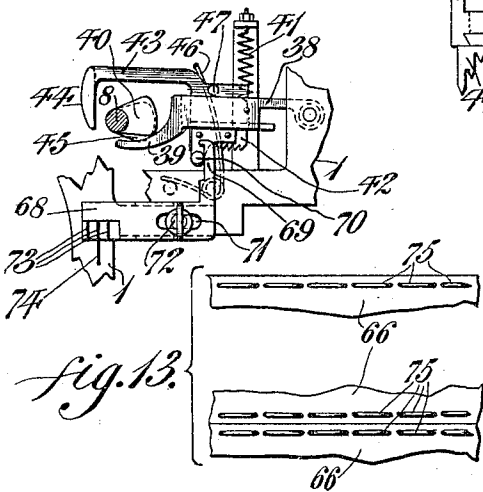


fig. 12.

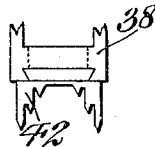


fig. 13.

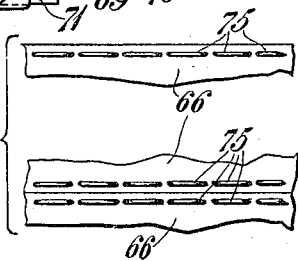
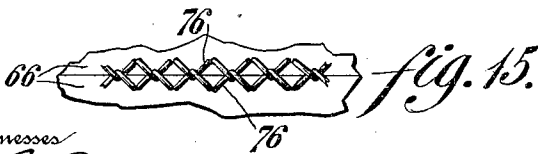
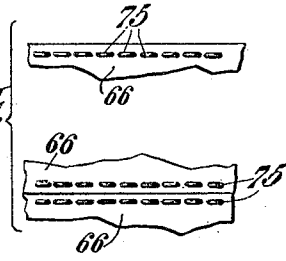


fig. 14.



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7 SHEETS—SHEET 7.

Fig. 16.

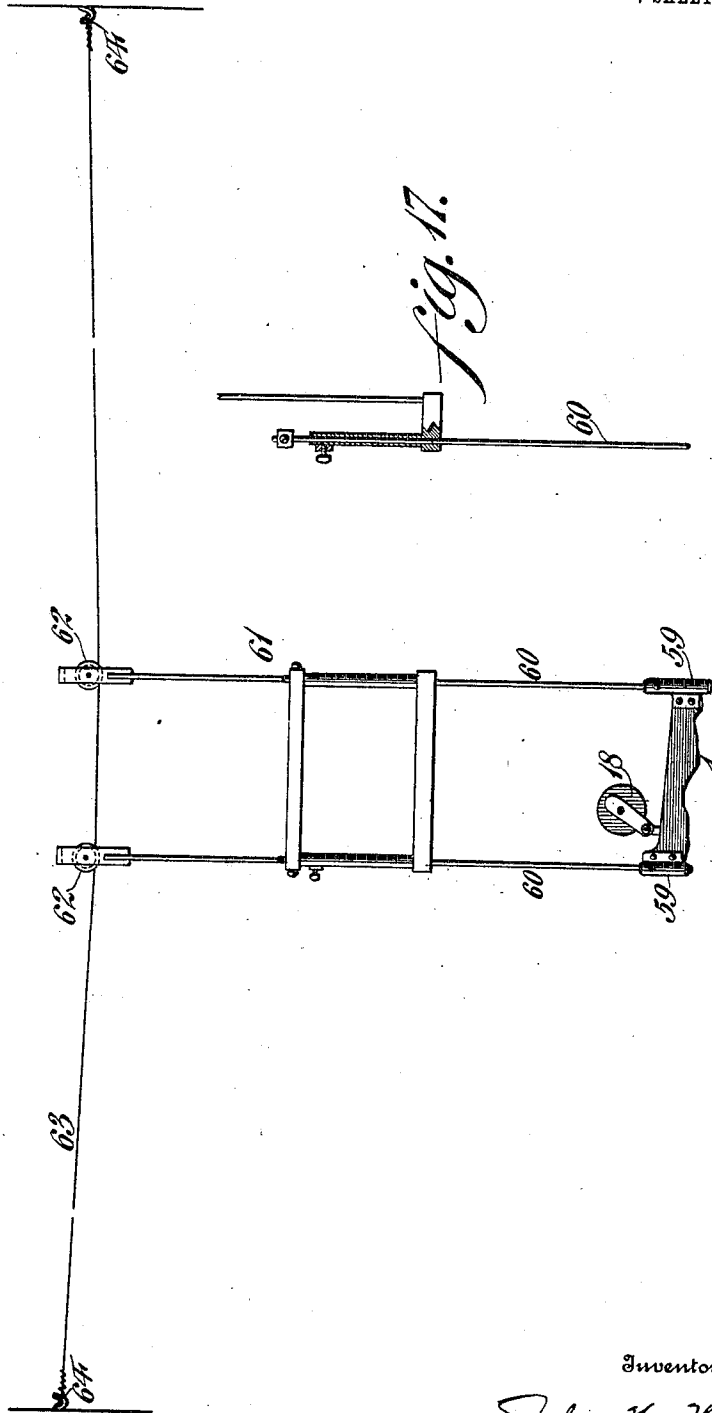


Fig. 17.



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UNITED STATES PATENT OFFICE.

JOHN H. HOOD, OF PHILADELPHIA, PENNSYLVANIA.

CARPET-SEWING MACHINE.

No. 838,332.

Specification of Letters Patent.

Patented Dec. 11, 1906.

Application filed July 18, 1905. Serial No. 270,196.

To all whom it may concern:

Be it known that I, JOHN H. HOOD, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Carpet-Sewing Machine, of which the following is a specification.

My invention consists of a new and useful carpet-sewing machine, and has for its object to provide a machine that can be employed for making through-and-through stitches or alternate through-and-through stitches with overcast stitches and also to provide means for regulating the length of the stitches.

My invention further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 is a side elevation of the carpet-sewing machine embodying my invention. Fig. 2 is a side elevation of the machine viewed from the side opposite to that shown in Fig. 1. Fig. 3 is an end elevation of the machine. Fig. 4 is an end view of a portion of Fig. 1. Fig. 5 is a plan view of the machine. Figs. 6 and 7 are side elevations of certain detached portions of the machine, partly in section and on an enlarged scale. Fig. 8 is a perspective view of a detached portion of the machine. Fig. 9 is an end view of certain detached portions of the machine. Figs. 10 and 10^b are partial side elevations and partial vertical sections of certain detached portions of the machine. Fig. 11 is a side elevation of certain detached portions of the machine. Fig. 12 is an end view of certain of the parts seen in Fig. 10. Figs. 13, 14, and 15 illustrate different forms of stitches. Fig. 16 is a side elevation of a carriage or trolley which may be employed in connection with my invention. Fig. 17 is a partial side elevation and partial vertical section of certain of the parts seen in Fig. 16. Fig. 18 is a plan view of a modified form of shuttle-operating mechanism.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the frame of the machine in which is journaled the main driving-shaft 2, which is provided with a crank 3 and also with the gear-wheels 4 and 5, which are secured thereto. The frame 1 may be provided with a handle 6, by means of which it is guided.

The gear-wheel 4 meshes with a gear-wheel 7, secured to a shaft 8, which has se-

cured thereon a pulley 9, around which is passed a belt 10, which also passes around the pulley 11, so as to impart motion to the balance-wheel 12, which is journaled in a suitable portion of the frame 1.

The gear-wheel 5 meshes with a gear-wheel 13, which is journaled in the frame 1 and has secured thereto a cam 14, which engages with a roller on an arm 15, journaled in the frame 1 and which is adapted to operate the arm 16, through the eye of which passes the yarn 17, which is supplied from a spool 18, supported in the frame 1, which latter has secured thereto and in any suitable manner the tension device 19, which may be of any well-known form.

Journaled in the frame 1, as at 20, (see more particularly Fig. 6,) is an arm 21, provided with a slot 22, in which is fitted a roller 23, which is carried by the cam 14, for a purpose hereinafter described. In the upper portion of the arm 21 is a slot 24, in which is fitted a roller 25, carried by the plate 26, which is guided in the frame 1 and has secured therein the needle 27. The arm 21 has rigidly secured thereto a projecting member 28, which may, however, be integral therewith, and has pivoted in its upper end an arm 29, in which is fitted a bar 30, which is permitted to slide thereon by reason of the slot 31 in said bar and pin 32^a in the arm 29. The bar 30 is pivoted at 32 to the arm 33, which is secured to the shaft 34, journaled in the frame 1, so as to rock said shaft, and consequently the arm 35, secured thereto, and thus impart a rocking motion to the arm 36, which operates the shuttle-arms 37.

Pivoted in the frame 1 is an arm 38, whose free end 39 is engaged by a cam 40 on the shaft 8, (see more particularly Fig. 10,) said arm being retained at all times against the cam 40 by the spring 41. Fitted in the arm 38 so as to be capable of sliding therein is a feed-block 42, provided with an extension 43, one extremity 44 of which is in engagement with a cam 45 on the shaft 8. Supported in the frame 1 is a spring 46, which engages with a stud or pin 47 on the extension 43, so as to keep the extremity 44 of said extension in contact with the cam 45.

Secured to the shaft 8 is a pinion 48, which meshes with a gear-wheel 49, which is journaled in the frame 1 and has secured thereto a cam 50, (see Fig. 7,) against which engages a roller on a lever 51, which is fulcrumed at 52 in the frame 1 and is provided with a bar

53, which is in engagement with a plunger 54, guided in the frame 1, and which is adapted to depress the spring-plate 55, which has one of its ends secured, as at 56, to the frame 1, while its free end is provided with a grooved block 57, for a purpose hereinafter described. The bar 53 is retained normally in its elevated position by a spring 58, as seen in Fig. 1.

Secured to the frame 1 are sleeves 59, which are adapted to receive the ends of the rods 60, (see more particularly Fig. 16,) which form part of an adjustable carriage 61, provided with rollers 62, adapted to travel upon a wire or its equivalent 63, whose ends may be secured to fixed points, as at 64, the purpose of all of which is hereinafter described.

65 designates a guide for the carpet 66.

67 designates a roller adapted to travel upon the upper edges of the carpet 66, and thus support the machine, said roller being rotatably mounted in a bracket 77, provided with a slot 78 and set-screws 79, whereby said roller may be vertically adjusted.

The carpet-guide 65 may be vertically adjusted either by means of the set-screw 80 in the bracket 81, by which said guide is carried, or by means of the slot 82 therein and set-screw 83.

Guided in the frame 1 is a gage 68, formed with an upright member 69, against which a stud 70 (see Fig. 11) on the feed-block 42 is adapted to contact at certain times and for a purpose hereinafter described. The gage 68 is provided with a slot 71, through which is passed a set-screw 72, which clamps the former firmly in position when adjusted for a predetermined length of stitch, said gage 68 being also provided with graduations 73, while the frame 1 is provided with an index 74, with which said graduations 73 are adapted to register.

The operation is as follows: Two pieces of carpet 66, which are stretched and clamped to some fixed points, serve as a support for the machine herein referred to and along which the same may travel during the process of sewing. The edges of the carpet 66 are inserted in the spaces between the guide 65 and adjacent portions of the frame 1, as seen in Fig. 4. The roller 67 rests upon the two pieces of carpet 66 and supports the forward end of the machine, while its rear end is supported by a portion of the frame resting upon the carpet. The gage 68 is adjusted so as to regulate the desired length of stitch by sliding said gage either to the right or to the left, so as to bring the desired graduation 73 in alinement with the index 74, after which the clamping-screw 72 is tightened and firmly retains said gage in its adjusted position. The handle 3 is then operated, whereupon the gear-wheel 5 is rotated and imparts motion to the gear-wheel 13, and consequently to the cam 14 thereon, and thus imparts motion to the

arm 16, through which the thread 17 is passed, so that a sufficient quantity thereof may be drawn from the spool 18 to be converted into a stitch, as is usual. The roller 23 when carried around by the gear-wheel 13 imparts a rocking motion to the arm 21, which latter by reason of its connection with the slide 26 imparts a reciprocating motion thereto, and consequently to the needle 27 thereon. The arm 29 is carried to and fro by the arm 21, so that by reason of the bar 30, arms 33, 35, and 36, the shuttle-arms 37 are oscillated, and thus operate the shuttle in conjunction with the needle 27, so as to produce the stitches which secure the widths of carpet together, it being understood that the handle 6 is held in one hand, while the crank 3 is operated by the other hand. The gear-wheel 4 imparts motion to the gear-wheel 7, whereupon the shaft 8 is rotated, and imparts motion to the pulley 9, which by its belt or other connection 10 imparts motion to the balance-wheel 12. The rotation of the shaft 8 imparts motion to the cam 40, (see more particularly Fig. 10,) which depresses the free end 39 of the arm 38, and consequently the latter, against the resistance of the spring 41, and thus causes the teeth in the feed-block 42 to firmly engage with the carpet, and thus prevent a longitudinal motion of said block relatively to the carpet, so that during this interval of time the extremity 44 becomes a fixed point, against which the cam 45 works, so that when the heavy side is brought in contact therewith it causes the shaft 8, and consequently the frame 1 and all parts other than the feed-block 42, extension 43, and pin 47, to advance relatively to the feed-block 42 against the resistance of the spring 46 and in the direction indicated by the arrows *a* in Figs. 10 and 10^b, and when the cam 40 leaves the free end 39 of the arm 38 the latter is lifted and returned to its elevated or normal position by the spring 41, thereby removing the teeth in the feed-block 42 from their engagement with the carpet, and thus permit the spring 46 to advance the feed-block 42, and, consequently the parts connected therewith, whatever distance the gage 68 permits, it being noted that the stud 70 on the feed-block 42 advances therewith until it abuts against the upright member 69, which prevents the further advance of said feed-block 42, it being evident that the position of the cam 45 was such as to permit the advance movement of the block 42 and, furthermore, that this movement of said block 42 is more or less according to the position of the gage 68, whereby different lengths of stitches can be produced. The rotation of the shaft 8 imparts motion to the pinion 48, and consequently to the gear-wheel 49 and cam 50, whereupon the lever 51 and bar 53 are operated and depress the plunger 54, which when brought in contact with the spring-plate 55

depresses it and the grooved block 57, and consequently the edges of the carpet therein, so as to bring the latter below the path of the needle 27, whereupon the needle does not enter the carpet, and thus produces an overcast interlocked stitch 76. (See Fig. 15.) When the grooved block 57 is not depressed, the edges of the carpet are permitted to remain at their normal heights, which are such that the needle 27 penetrates the carpet and produces a through-and-through stitch 75. (See Fig. 13.)

One revolution of the gear-wheel 5 causes two strokes of the needle 27, owing to the difference in their diameters.

The diameters of the gear-wheels 7, 48, and 49 are so proportioned relatively to the gear-wheel 4 that when said gear-wheel 4 makes one revolution the plunger 54 is depressed at every alternate stroke of the needle 27, so that the carpet when sewed consists of alternate overcast interlocked stitches and through-and-through stitches.

It is apparent that when the bar 53 and plunger 54 are disconnected from the machine the edges of the carpet are not brought below the path of the needle 27, whereupon the sewing will consist of through-and-through stitches.

When the carpet to be sewed is of light structure—such as ingrain, for instance—the weight of the machine is carried by the wire or its equivalent 63, while in the case of a tough carpet—such as brussels, for instance—the machine may be supported directly by the carpet, and the wire 63 and carriage 61 may be dispensed with.

When it is desired to convert the rocking motion of the shuttle into a rotary one, the bolt 36^a (see Fig. 6) is removed, whereupon no connection exists between the arms 35 and 36. A bevel-gear 77 (see Fig. 18) is then secured to the shaft of the gear 49 and meshes with the bevel-gear 78, which is secured to the shaft of the shuttle-arms 37, and thus imparts a rotary motion to the latter, and consequently to the shuttle.

It is to be noted that the arm 53 is provided with a slot and is secured to arm 51 by means of a set-screw, as seen in Figs. 5 and 7, the other end of said arm, which engages with the plunger 54, being provided with a slot, so that when it is desired to disengage said bar 53 from the plunger 54 the set-screw is first loosened, the bar 53 moved rearwardly, and the set-screw then retightened, thus making it unnecessary to remove the bar 53 from the machine. The adjustment of the roller 67 raises or lowers the machine on the carpet, and thus regulates the amount of engagement or bite of the feeding device therewith.

The shaft of the arm 36 is flattened on one side and has acting thereagainst a spring 84, (seen clearly in Fig. 2,) which, as said arm is rocked permits a dwell in the movement of

the shuttle while the loop is being formed. It is to be further noted that the carpet-guide 65 extends beyond the needle and is hollowed out or provided with a recess, so as to give space for the passage of the needle. This guide is provided with a suitable spring, so that when the plunger engages with the carpet and presses it downwardly the spring 65^x (seen best in Fig. 4) will allow the guide to yield, which produces a much better result than if I employ a solid unyielding guide.

The frame of the machine, which supports the greater part of the actuating mechanism, may be integral, if desired, thus greatly cheapening the cost of the construction.

As seen in Figs. 16 and 17, the rods 60, which are secured to the brackets 59, may be retained in any position by means of a suitable set-screw, so that when it is desired to place a new breadth of carpet in position it will be simply necessary to raise the machine on its carrier, it being apparent that by adjusting the set-screw the machine will be held in any desired position.

It will be evident that various changes may be made by those skilled in the art which may come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

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

1. In a carpet-sewing machine, stitch-forming mechanism comprising a needle and a shuttle and means for operating the same including an arm pivoted on the frame and operatively connected with said needle and shuttle, an oscillatory member, a feed-block movable therewith, means for actuating said arm, thread-feeding mechanism and actuating means therefor.

2. In a carpet-sewing machine, a shuttle, an oscillatory member, an arm pivoted to the frame and having a slot, a feed-block carried by said oscillatory member, means for oscillating said member, means pivotally connecting said arm with the shuttle, a member, and means thereon adapted to cooperate with said slot to actuate said arm and thereby the shuttle.

3. In a carpet-sewing machine, a shuttle, an oscillatory member, means for oscillating the same, an arm pivoted to the frame, means pivotally connecting said arm with the shuttle, means for actuating said arm and thereby the shuttle, and a feed-block carried by said oscillatory member.

4. In a carpet-sewing machine, stitch-forming mechanism, comprising a needle and a shuttle, a feed-block, a pivoted arm carrying the same, an arm pivoted to the frame adapted to actuate said stitch-forming mechanism, a thread-feeding member, a rotatable cam for raising and lowering the free end of

the arm carrying the feed-block, and a cam adapted to actuate the thread-feeding member to feed the thread from the spool.

5. In a carpet-sewing machine, stitch-forming mechanism, feeding mechanism, an arm pivoted to the frame, means for raising and lowering the free end thereof, embodying a rotatable cam adapted to actuate said arm, a feed-block having sliding engagement with said arm, a second cam adapted to actuate said feed-block and means for actuating said cam.

6. In a carpet-sewing machine, sewing mechanism, a roller adapted to support the forward portion of the machine, a feed-block, means for reciprocating said block, an arm pivoted to the frame and in which said block is reciprocated and means for raising and lowering the free end of said arm.

7. In a carpet-sewing machine, driving means, a shaft driven thereby, cams fixed on said shaft, a feed-block reciprocated by one of said cams, an arm pivoted to the frame and within which said block reciprocates actuated by the other of said cams, and a spring adapted to keep in engagement said cam and the coacting portion of said block.

8. In a carpet-sewing machine, driving means, a shaft driven thereby, an arm pivoted to the frame, a cam on said shaft adapted to actuate said arm, a feed-block having sliding engagement with said arm, an extension from said block having a depending arm, a cam on said shaft adapted to coact with said depending arm, and a spring adapted to maintain the latter in engagement with the coacting cam.

9. In a carpet-sewing machine, driving means, a shaft driven thereby, an arm pivoted to the frame, a cam on said shaft adapted to actuate said arm, a feed-block having sliding engagement with said arm, an extension from said block having a depending arm, a cam on said shaft adapted to coact with said depending arm, a spring adapted to maintain the latter in engagement with the coacting cam, and a roller for supporting the forward portion of the machine.

10. In a carpet-sewing machine, sewing mechanism, comprising a needle, a shuttle and feeding mechanism, an arm pivoted to the frame adapted to actuate both the needle and the shuttle, means for actuating said arm, an oscillatory arm, means for operating said oscillatory arm, a feed-block slidably mounted thereon, means for sliding said feed-block, and means for regulating the travel of said feed-block.

11. In a carpet-sewing machine, stitch-forming mechanism embodying a needle and a shuttle, driving means, a shaft driven thereby, feeding mechanism for advancing the machine, means on said shaft for actuating said mechanism, a gear on said shaft, a second gear coacting therewith, a cam secured to said second gear, thread-feeding means

actuated by said cam, a third gear actuated from said shaft, and a fourth gear driven by said third gear, and a cam carried by said fourth gear and carpet-depressing means actuated by said cam.

12. In a carpet-sewing machine, stitch-forming mechanism, embodying a shuttle, driving means, a shaft driven thereby, a needle, means operatively connected with said shuttle, feeding mechanism including a feed-block, and an oscillatory member carrying said feed-block for advancing the machine, means on said shaft for actuating said mechanism, a cam, and means actuated by said cam for intermittently pressing the carpet edges out of the needle-path.

13. In a carpet-sewing machine, stitch-forming mechanism, driving means, a shaft driven thereby, feeding mechanism for advancing the machine, means on said shaft for actuating said mechanism, a gear secured on said shaft, a second gear adapted to coact therewith, a cam secured to the latter, a third gear rotatable with said second gear, a fourth gear driven by said third gear and adapted to actuate the shuttle, and means actuated by said cam for intermittently pressing the carpet edges out of the needle-path.

14. In a carpet-sewing machine, sewing mechanism, comprising stitch forming and feeding mechanism, a guide situated below the needle-path, a presser-block yieldingly secured to the frame and a plunger adapted to coact with said block whereby the latter intermittently presses the carpet edges below the needle-path.

15. In a carpet-sewing machine, sewing mechanism comprising stitch forming and feeding mechanism, a guide situated below the needle-path, a presser-block yieldingly secured above the needle-path, a plunger adapted to coact with said block to intermittently press the carpet edges below the needle-path, a bar pivotally secured at one end to said plunger, a lever pivotally mounted secured to the other end of said bar and means for actuating said lever.

16. In a carpet-sewing machine, sewing mechanism, comprising stitch forming and feeding mechanism, a stationary guide below the needle-path, a presser-block yieldingly secured above the needle-path, a plunger adapted to coact with said block, a bar pivotally secured at one end to said plunger, a lever adapted to coact with said bar, a cam adapted to coact with said lever, whereby said block intermittently presses the carpet edges below the needle-path and means for actuating said cam.

17. In a carpet-sewing machine, sewing mechanism, comprising stitch forming and feeding mechanism, a stationary guide below the needle-path, a presser-block yieldingly secured above the needle-path, a plunger

adapted to coact with said block, a bar pivotally secured at one end to said plunger, a lever adapted to coact with said bar, a roller carried by said lever, a cam adapted to coact
5 with said roller, whereby said block intermittently presses the carpet edges below the needle-path and means for actuating said cam.

18. In a carpet-sewing machine, a needle, a shuttle and a shuttle-arm, driving means, a
10 member actuated thereby, a roller mounted on said member, an arm pivoted to the frame, a slot in said arm within which said roller is movable and whereby said arm is actuated and means coacting with said arm and
15 with oscillatory shuttle-arms for actuating the needle and the shuttle.

19. In a carpet-sewing machine, a shuttle, driving means, a member actuated thereby, an arm actuated by said member, a needle-
20 plate reciprocated by said arm, a member projecting from the latter, a slide pivoted to said member, a bar adapted to coact with said slide and means secured to said bar for rocking the shuttle.

25 20. In a carpet-sewing machine, a shuttle, driving means, a member actuated thereby, a roller mounted on said member, an arm actuated by said roller, a needle-plate reciprocated by said arm, a member projecting from the
30 latter, a slide pivoted to said member, a bar adapted to coact with said slide and means secured to said bar for rocking the shuttle.

21. In a carpet-sewing machine, a shuttle, a driving-gear, a driven gear, a member secured to the latter, an arm actuated by said
35 member, a needle-plate reciprocated by said arm, a slide pivotally connected with said plate, a bar coacting with said slide and actuated thereby, a rock-shaft actuated by said
40 bar and means actuated by said rock-shaft for actuating the shuttle.

22. In a carpet-sewing machine, a shuttle, a driving-gear, a driven gear, a member secured to the latter, a roller fastened to said
45 member, an arm actuated by said roller, a

needle-plate reciprocated by said arm, a member projecting from the latter, a slide pivoted to said member, a bar coacting with said slide and actuated thereby, a rock-shaft actuated
50 by said bar and means actuated by said rock-shaft for actuating the shuttle.

23. In a carpet-sewing machine, a driving-gear, gears driven thereby, a member secured to one of said driven gears, a roller mounted
55 on said member, an arm actuated by said roller, a needle-plate and a shuttle actuated by said arm, a shaft on which the other of said driven gears is fixedly mounted, a second gear fixed to said shaft, a gear driven thereby,
60 a cam secured to the latter and means actuated by said member for intermittently pressing the carpet edges below the needle-path.

24. In a carpet-sewing machine, a shuttle, a driving-gear, gears driven thereby, a member secured to one of said driven gears, a roller
65 mounted on said member, an arm actuated by said roller, a needle, oscillatory shuttle-arms, and a shuttle actuated by said arm, a shaft on which said other driven gear is fixed,
70 a member on said shaft and means actuated by said member for feeding said machine.

25. In a machine of the character described, sewing mechanism, comprising stitch forming and feeding mechanism, sleeves adjust-
75 ably secured to said frame, and a carriage for supporting the machine secured to said sleeves.

26. In a machine of the character described, sewing mechanism comprising stitch forming and feeding mechanism, a guide suitably
80 pivoted and extended beyond the needle, a spring adapted to normally hold said guide in raised position, a recess in said guide for the passage of the needle and means for vertically
85 adjusting said guide.

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