J. C. OWENS.

CARPET SEWING MACHINE.

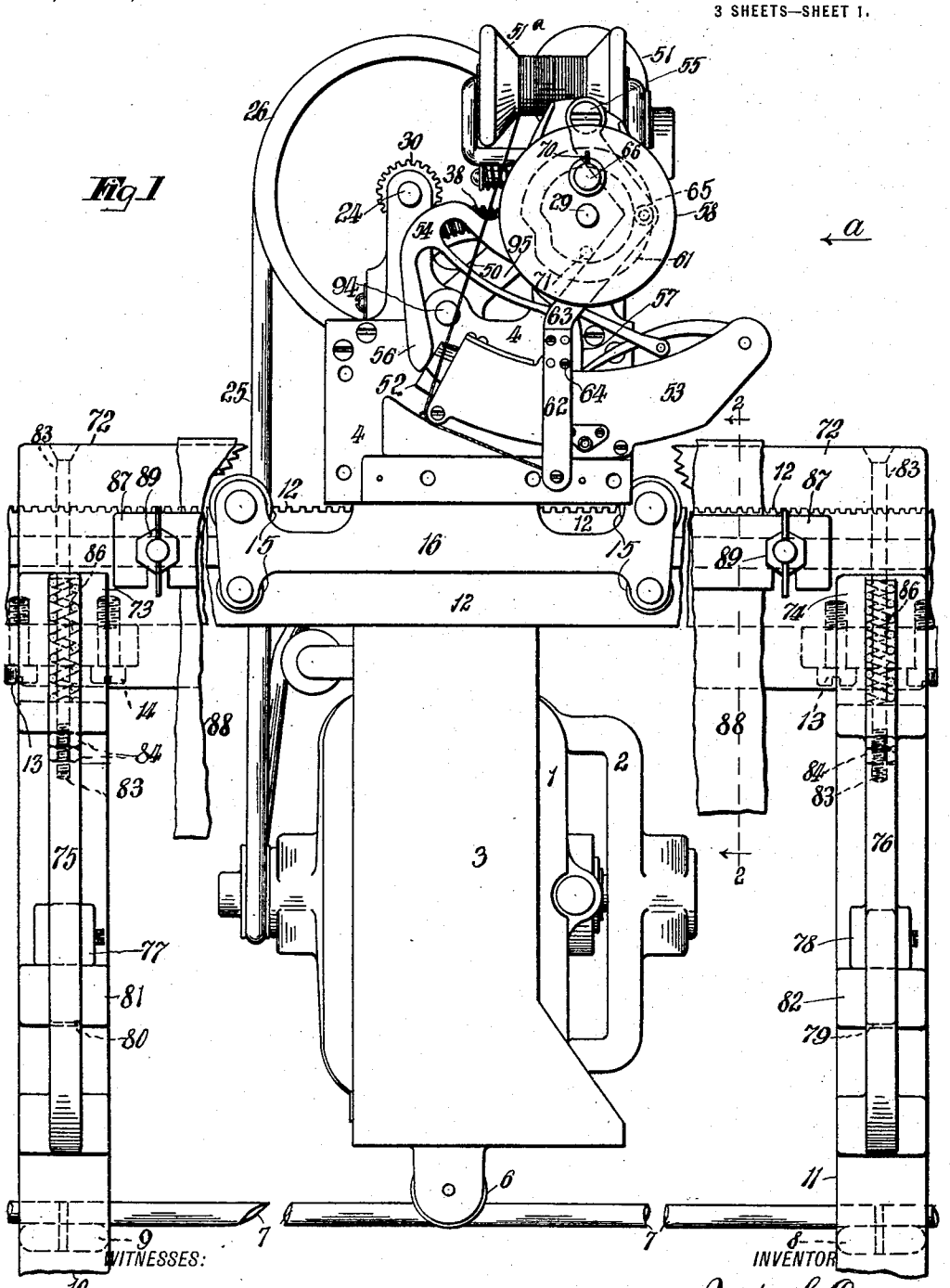
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1,171,636.

Patented Feb. 15, 1916.

3 SHEETS—SHEET 1.

Fig. 1



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3 SHEETS—SHEET 2.

Fig. 2

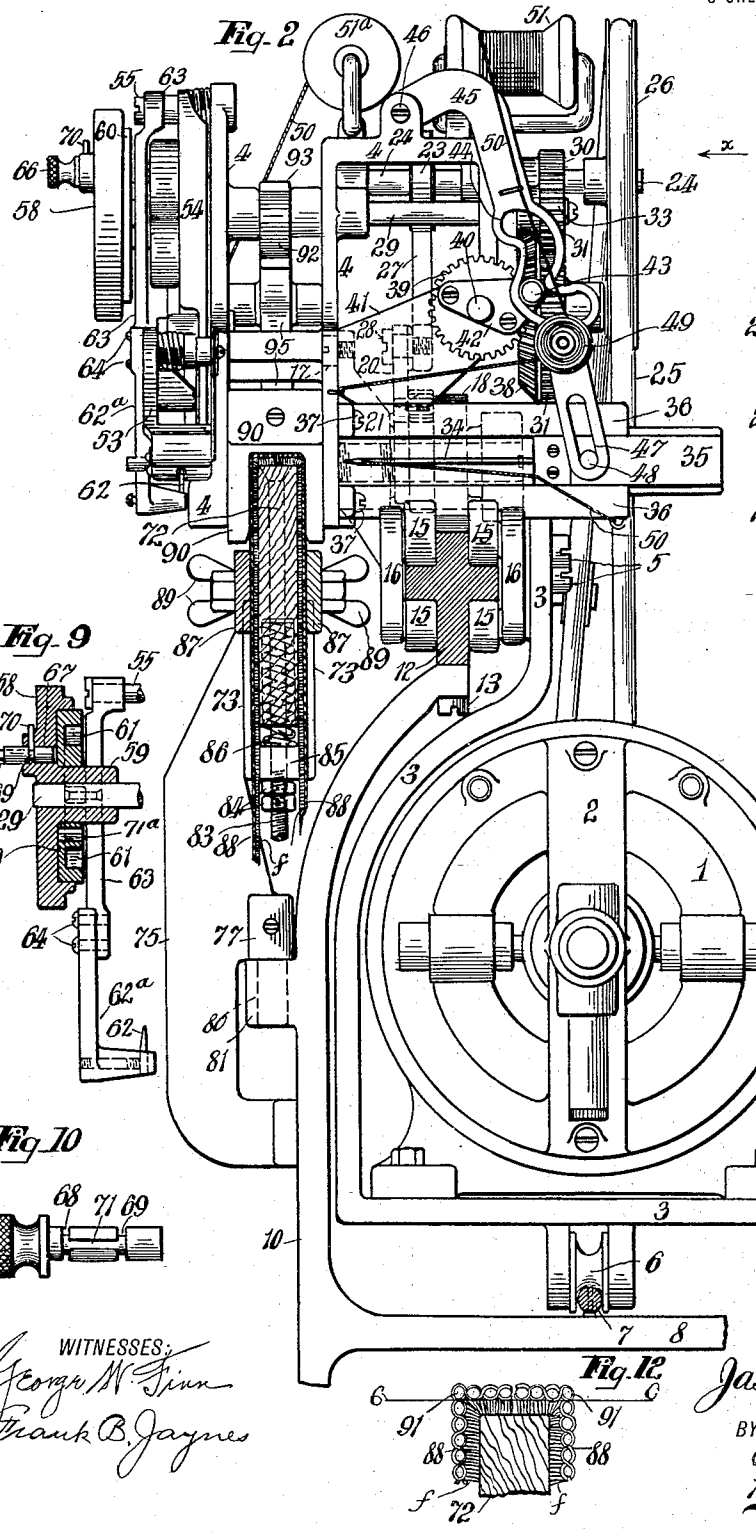


Fig. 3

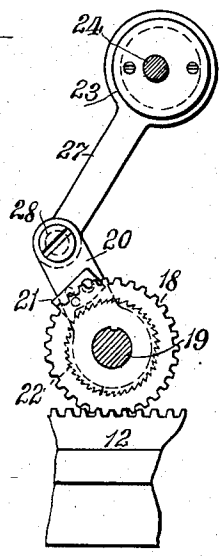


Fig. 9

Fig. 11

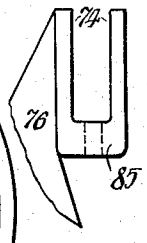


Fig. 10

Fig. 12

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3 SHEETS—SHEET 3.

Fig. 4

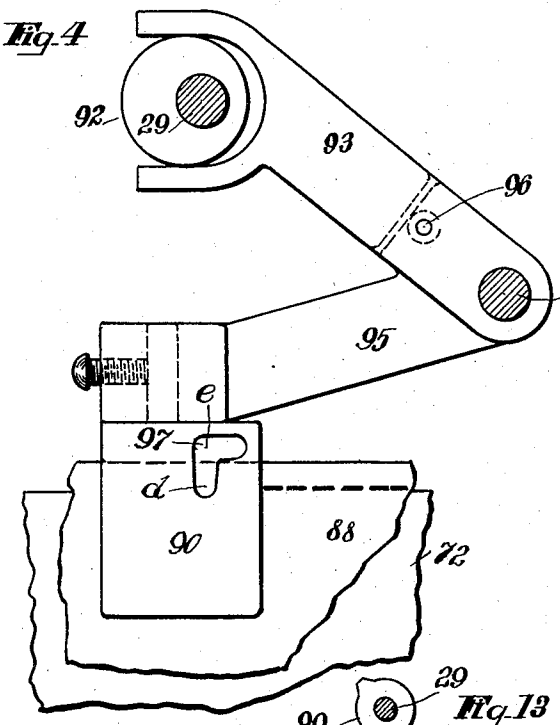


Fig. 5

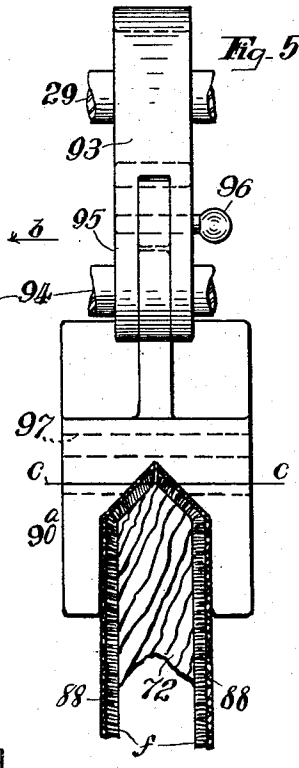


Fig. 13

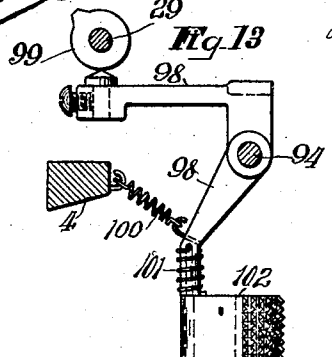


Fig. 7

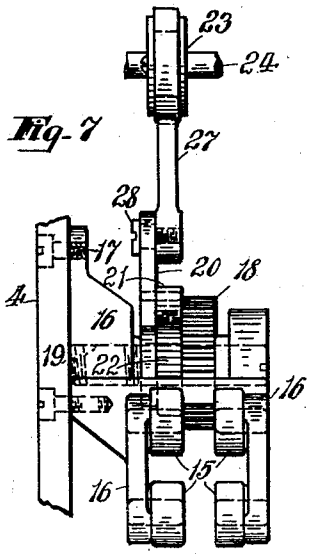


Fig. 14

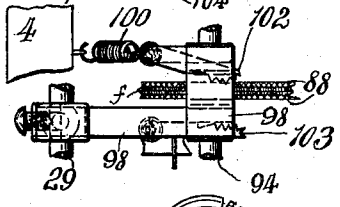


Fig. 6

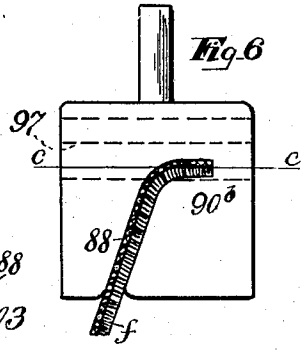
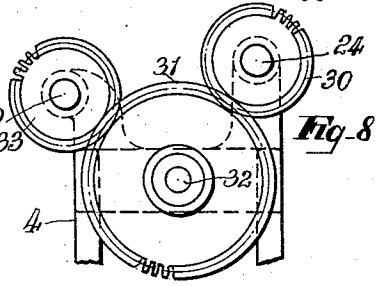


Fig. 8



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UNITED STATES PATENT OFFICE.

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CARPET-SEWING MACHINE.

1,171,636. Specification of Letters Patent. Patented Feb. 15, 1916.

Application filed October 1, 1913. Serial No. 792,733.

To all whom it may concern:

Be it known that I, JASPER C. OWENS, citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Carpet-Sewing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to carpet sewing machines, and it consists in certain details of construction which will be more fully explained by reference to the accompanying drawings wherein the same figures of reference indicate like parts throughout the several views.

Figure 1 represents a front elevation of the machine; broken view of a carpet support, carpet rack, standards and lower guide rod; Fig. 2 is a side elevation of the machine looking in the direction of arrow *a* of Fig. 1, sectional view of a carpet, its support and carpet clamps and rack on line 2, 2 of Fig. 1, also sectional view of lower guide rod, and broken view of one of the supporting standards; Fig. 3 is a broken view of the feed rack and detail view of the mechanism for feeding the machine along the rack; Fig. 4 is an enlarged detail side elevation of mechanism for depressing the carpet support comprising levers, cam and guide, broken view of the carpet support and carpet, sectional view of the main shaft of the machine, and sectional view of the fulcrum shaft for the levers; Fig. 5 is an enlarged rear elevation of the construction shown in Fig. 4 looking in the direction of arrow *b* of Fig. 4, but showing a different form of carpet guide and carpet support, the latter in section; Fig. 6 is an enlarged detail view of a modified construction of the carpet guide adapted for serging, also broken view of a carpet in the guide; Fig. 7 is an enlarged detail elevation of the trolley connecting the machine with the rack; broken view of the main shaft and machine frame; Fig. 8 is a detail view of the gears for transmitting motion to the main shaft, and broken view of the machine frame looking in the direction of arrow *x* of Fig. 2; Fig. 9 is a detail broken sectional view of mechanism for changing the stitching; Fig. 10 is an enlarged detail view of the change pin pertaining to the stitching mechanism; Fig. 11 is a broken detail view of one of the carpet supporter brackets; Fig. 12 is an enlarged broken detail view of the carpet and carpet supporter; Fig. 13 is a detail view and side elevation of mechanism for feeding the machine without the rack; and Fig. 14 is an upper plan view of the mechanism shown in Fig. 13.

The present machine is adapted to be driven along a carpet through the medium of the electric motor 1 journaled in the frame 2 supported on the bracket 3 secured to the lower part of the machine frame 4 by means of the screws 5. Locating the motor below the sewing mechanism will serve as a counterbalance for the machine, which would otherwise be top heavy and awkward to manage. To assist this counterbalancing feature and to keep the device from lateral movement, the trolley 6, carried by the bracket 3, is guided on the rod 7 supported on the arms 8 and 9 projecting from the standards 10 and 11, which standards are adapted to rest on the floor.

The rack 12 is secured to the upper ends of the standards by the screws 13—14 and the entire machine, including the sewing mechanism and motor, will be supported and guided on the rack by means of the trolley rolls 15 carried by the trolley frame 16. This frame, Fig. 7, is secured to the machine frame by the screw 17, and it carries part of the mechanism for actuating the machine along the rack, comprising the rack pinion 18 (see also Fig. 3) journaled on the rod 19 secured in the said trolley frame. The arm 20 is also journaled on said rod and it carries the pawl 21 adapted to engage the ratchet wheel 22 secured to the rack pinion 18. The feed is actuated from the eccentric 23 on the drive shaft 24, which shaft is driven from the motor through the medium of the belt 25, Figs. 1 and 2, and pulley 26. The eccentric strap arm 27 is pivotally connected to the arm 20 by the screw 28.

The main shaft 29 is driven from the shaft 24 by the pinion 30 meshing with the

large gear 31 journaled on the short rod 32 secured in the machine frame 4 as shown more clearly in Fig. 8, and the pinion 33 on said main shaft also meshing with said large gear.

The needle 34 is secured to the slide 35 operatively mounted in the bracket 36 secured to the machine frame by the screws 37. This slide is reciprocated through the medium of the bevel gear 38, secured to the large spur gear 31, meshing with the bevel pinion 39 journaled on the pin 40 located in the end of the arm 41 integral with the machine frame. The plate 42 is secured to this bevel pinion and it carries the roll 43 adapted to operate in the cam groove 44 of the lever 45 pivotally mounted on the screw 46 of the machine frame. The free end of this lever has the elongated slot 47 embracing the pin 48 of the slide 35. 49 is the tension disk carried by said lever over which the thread 50 runs and is intermediate of the delivery spool 51 and the needle.

The shuttle 52 is actuated in the race 53 through the medium of well known mechanism comprising the lever 54, journaled on the screw 55 secured to the machine frame. This lever has the usual arms 56, 57 to carry the shuttle in its reciprocating movements. This lever is oscillated in the usual manner from a cam (not shown). Mechanism for changing from a lock stitch to a loop stitch is shown more clearly in Figs. 1 and 9.

58 is a housing plate secured to the main shaft 29 and it has the inwardly projecting hub 59 on which hub is journaled the cam plate 60 having the cam groove 61. The looper 62, Figs. 2 and 9, projects from the lower end of the arm 62^a and in conjunction with the needle forms the well known loop. This arm is removably secured to the arm 63 by screws 64, and the upper end of this latter arm is pivotally supported on the same screw 55 as the shuttle carrying arm 54. 65 is a roll carried by said arm adapted to enter the cam groove 61. The change from a lock to a loop stitch is effected through the medium of the change pin 66 shown in detail in Fig. 10. This pin operates in hole 67 of the plate 58, and is provided with the circumferential grooves 68 and 69 adapted to receive the vertically operated locking pin 70. As shown in Fig. 9, the change pin is withdrawn from contact with the cam and said cam will remain idle while the shuttle is in operation. The end of the locking pin 70 will then be in the groove 69. When the looper is to be operated, the shuttle is removed and the change pin is slightly turned to bring the lower end of the locking pin in line with the longitudinal groove 71, Fig. 10. When the inner end of said change pin is pushed into the hole 71^a of the cam, the locking pin will lie in the circumferential groove 68 and the looper will operate. When the looper is in operation, both spools, 51, 51^a are used.

72 is the carpet support, which can be of any desired length to accommodate carpets of various sizes. This support is removably located in the upper forked ends 73, 74 of the brackets or supporting guides 75, 76. One of said forked ends, 74, is shown more clearly at Fig. 11. These brackets or supporting guides have hub portions 77, 78, in which are secured pins 79, 80 adapted to enter holes in the hub portions 81, 82 of the standards 10, 11.

83 are countersunk head screws passing through the carpet support and through the base of the before mentioned forked openings of the carpet supporter brackets. The lower threaded end of these screws carry the jam nuts 84. Surrounding these screws and resting on the base 85 of the forked ends of brackets 75, 76 are the springs 86, which springs project into holes in the bottom of the wooden carpet supporter 72.

87 are plates located on each side of the carpet supporter adapted to clamp the carpet 88 firmly thereto by means of the thumb nuts 89.

90 is a forked or recessed guide that embraces the upper edge of the carpet supporter and is shaped to conform to the various kinds of stitching required. In Figs. 2, 4 and 12 the forked opening is rectangular, adapted for cross joint work where the inner edges of the carpet are turned over upon the upper edge of the supporter 72 far enough to have the needle pass under the fourth warp 91 as represented by line *c* of Fig. 12. It is, however, immaterial what number of warps are in advance of the line of the needle provided there are enough to afford a firm anchorage for the thread so that the onward strain against the sewed joint will not pull the warp from the woof.

For overcast work, the guide is actuated by the cam 92, Fig. 4, from the main shaft 29. This cam is embraced by the forked lever 93 whose lower end is pivoted on the stationary rod 94 anchored in the machine frame. One end of the lever 95 is also pivoted on the rod 94 and its opposite end carries the guide 90. In overcast work, the two levers are connected together by the release pin, so that, when the needle passes through the angular opening 97 of the guide, at the point *d*, and under the fourth warp of the carpet, as before mentioned, and has retreated, the guide will be depressed by the cam 92, so that the needle will pass through the opening in the guide at the point *e* and above the carpet. For other than overcast work, the release pin 96 is removed, so that the lever 93 will simply oscillate on the rod 94 under the influence of its actuating cam, while the guide will remain stationary. When the guide is depressed, as before men-

tioned, it will depress the carpet supporter 72 and also compress the springs 86, so that the carpet support will always maintain its proper relative position with respect to the guide and carpet.

For raw edge or miter work, the upper edge of the carpet supporter 90^a is angular or beveled as shown in Fig. 5, and the bottom of the forked guide is correspondingly shaped. Through and through sewing and overcasting can be done with the guide and supporter V-shaped as well as in the construction just described for Fig. 4.

For serging or converting a raw edge into a selvage edge, the guide 90^b shown at Fig. 6 is employed, wherein the end of the carpet is bent over so that the path of the needle, represented by line *c*, will pass between the plush and the warp and woof of the carpet as shown. The line *c* represents the path of the needle in Figs. 5, 6 and 12.

The machine feeding arrangement shown in Figs. 13 and 14 is adapted for use with either hand operated or automatically operated machines. In this construction, the forked lever 98 is pivotally supported on the rod 94 and is actuated by the cam 99 on the main shaft 29. 100 is a retractile spring that maintains the lever normally in contact with the cam, and the spring 101, wound about the lower forked ends of the lever, is anchored to said forked ends and the serrated faced feed fingers, 101, 102, journaled on screws 104, so that said fingers are normally engaged with the carpet to feed the machine along. Either of said fingers are adapted to be temporarily disengaged from the carpet as shown by the open position of the fingers 103, 104.

One edge of the carpet supporter 72 can be shaped as shown in Figs. 2 and 12, and the opposite edge shaped as shown in Fig. 5, so that it will simply be reversed for the different manner of stitching required.

Having thus described my invention, what I claim is:

1. In a carpet sewing machine, carrying a shuttle for making a lock stitch, and a looper for effecting a loop stitch, mechanism for changing from one form of stitching to the other, comprising a housing plate securely mounted on the main shaft and having an inwardly projecting hub, a cam journaled on said hub for actuating the looper, a change pin operatively mounted in the housing plate and adapted to engage the cam and cause said cam to rotate with the shaft, and to remain idle when the change pin is withdrawn and the shuttle is operating, and means for locking said pin when either the shuttle or looper is in operation.

2. In a carpet sewing machine having supporting standards, removable brackets mounted thereon, and a spring controlled carpet supporter mounted in said brackets.

3. In a carpet sewing machine of the character described, a carpet supporter having its edge shaped to conform to the seam to be stitched, supporting guides for the carpet supporter, springs underlying said carpet supporter, a recessed guide carried by the machine having the bottom of said recess shaped to conform to the edge of the carpet supporter, and means for actuating the guide to temporarily depress the carpet supporter during the operation of overcasting.

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

JASPER C. OWENS.

Witnesses:
SILAS T. VELIE,
WM. H. COMLEY, Jr.

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