

United States Patent Office.

ARCHIBALD C. CRARY, OF UTICA, NEW YORK.

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IMPROVEMENT IN POWER-ATTACHMENT TO SEWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ARCHIBALD C. CRARY, of Utica, Oneida county, New York, have invented a new and useful Improvement in the Mode of Operating Sewing-Machines.

The nature of my invention consists in attaching to sewing-machines a spring or springs for driving the same, which spring or springs may be wound up by the weight of the operator pressing upon the seat; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents an end view of the seat and machinery.

Figure 2, a side view.

Figure 3, a view of the spring and barrel; and

Figure 4, a view of the endless screw.

The seat of the operator, to which the works are attached, is composed of a base, A, and the seat proper, A¹, and a platform, A², about half way between them. The seat is raised by four spiral springs A³ A³ A³ A³, in which springs are rods A⁴, extending into the tubes A⁵, which tubes run down to the base, A. When the seat A¹ is pressed down it rests on the tubes. On the under side of the seat A¹ are two racks, B B, which extend downwards through the platform A²; which racks turn two-flanged pinions B¹ B¹, attached to the shaft B². On the back side of the racks, and opposite the pinions B¹ B¹, are two friction-rollers B³, also flanged to keep the racks steady and up to the pinions. The shaft B² extends out beyond the side of the seat, and is supported by the frame of the machinery. On the end of the shaft is the loose wheel C. On each side of C is a ratchet, C¹ and C², and pawls C³ and C⁴. The ratchet and pawl C² and C⁴ serve to turn the wheel to the right, when the racks are pressed down, and the ratchet and pawl C¹ and C³ hold the wheel C while the racks are raised. Gearing into the upper side of the wheel C is a pinion, D, on the shaft D¹, and on the other end of D¹ is the barrel D², containing the coiled spring D³, for giving motion to the sewing-machine. The barrel is loose and revolves freely on the shaft, the spring only being attached to the shaft and to the barrel in the usual manner in such cases. The edge of the barrel D² is toothed, and geared into it is a pinion, E, on the shaft E¹, at the side of which pinion is the wheel E², on said shaft. Said wheel E² drives a pinion, F, on the shaft F¹; on which shaft is a wheel, F²; or, instead of a simple wheel, as described, it may combine a wheel and barrel, containing a spring similar to D³, in which case the barrel and wheel should be loose on the shaft, as in the case of D³. The wheel F² drives a pinion, G, on the shaft G¹, on which shaft is the wheel G², and said wheel G² drives a pinion, H, on the shaft H¹, on which shaft H¹ is a wheel, H². On the outer end of H¹ is a fan or fly, H³. On the inner end of H¹ may be a crank, H⁴, as seen in figs. 1 and 2, or other proper means of connecting the machinery with the sewing-machine. The racks should be of such length that when pressed down to the tubes they will turn the pinions B¹ B¹ once around, and consequently cause the wheel C, by means of the ratchet and pawl C² and C⁴, to revolve once around, while the pinion D should be of such size as to cause the shaft D¹ to revolve six times around. When the racks rise, they of course cause the shaft B¹ to revolve backwards, but the wheel C is prevented from turning with it by means of the ratchet and pawl C¹ and C³. To prevent the wheel C operating too often, in consequence of the movements of the operator, when once pressed down, the seat may be held down by means of steps A⁶. Of course the number of times the spring may be turned at each pressure upon the seat, may be varied by changing the proportions of the racks, pinions, or wheels.

The operation is apparent from the description already given. On sitting down on the seat, the weight of the operator presses down the racks B B, which cause the pinions B¹ B¹ to revolve, and they the shaft B², which in turn causes the loose wheel C to turn once around, by means of the ratchet and pawl C² and C⁴, which wheel C, in turning, causes the pinion D and shaft D¹ to turn around six times, and thus wind up the coiled spring in the barrel on said shaft. This spring being wound up, sets the pinion E in motion, and consequently the remainder of the machinery up to the crank H⁴ on the last shaft, which being connected with the sewing-machine by a connecting-rod or other proper connection, sets the sewing-machine in motion. The second spring will serve to accommodate the machinery to any shocks; but it is not necessary to the perfection of the machine. The fan or fly H³ gives steadiness to the motion of the machine. When the operator has pressed the seat down, it may be fastened there with the catch A⁶, until it is necessary to wind up the springs again, when the seat may be allowed to rise and then again be pressed down, as described.

In addition to this mode of winding up the springs, or in place of it, the ends of each spring-shaft may be fitted for a key, and be wound up like a watch or clock. And in place of either mode, or in addition to it, there may be a shaft with an endless screw thereon, so arranged as to move on the leaves of a pinion on the shaft B², or on the shaft D¹, which shaft and endless screw may be turned by a key, as before mentioned, (see fig. 4.) In this way great power may be applied to wind up the spring.

Having thus described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—
The herein-described mode of winding up the spring, by the pressure of the operator on the seat.

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Witnesses:

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