(Model.)

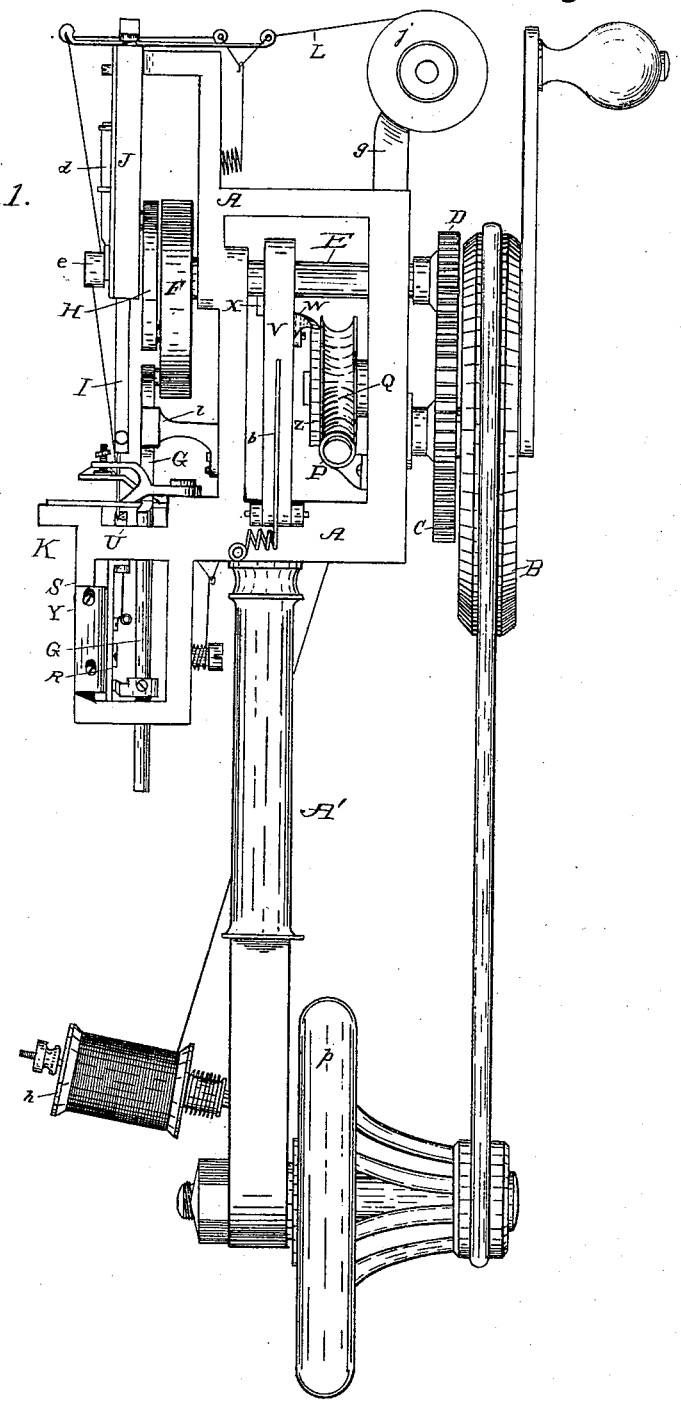
3 Sheets—Sheet 1.

G. GOWING.

SEWING MACHINE.

No. 262,586. Patented Aug. 15, 1882.

Fig. 1.



Witnesses:
H. L. Middleton
Walter Davidson

Inventor:
George Gowing
By Ellis Spear
Attorney

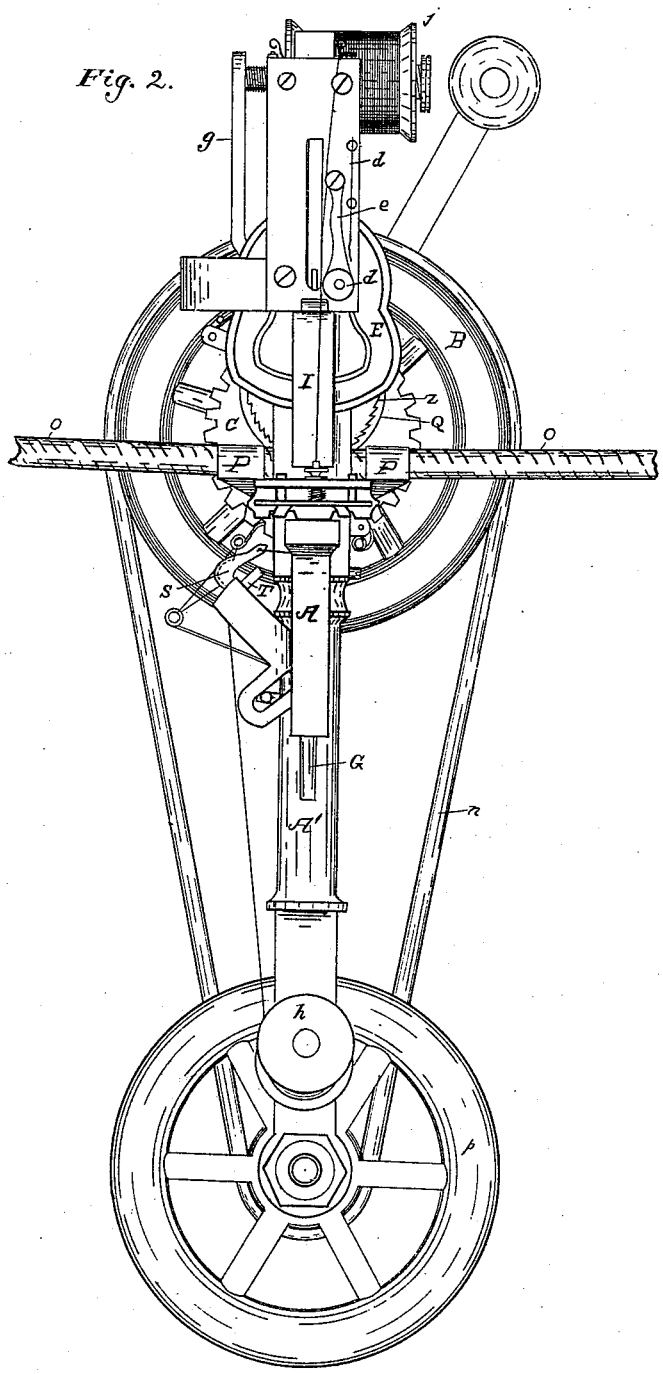
(Model.) 3 Sheets—Sheet 2.

G. GOWING.

SEWING MACHINE.

No. 262,586. Patented Aug. 15, 1882.

Fig. 2.



Witnesses:

F. L. Middleton

Walter Donaldson

Inventor:

George Gowing

By Ellis Spear

Attorney

(Model.) 3 Sheets—Sheet 3.

G. GOWING.

SEWING MACHINE.

No. 262,586. Patented Aug. 15, 1882.

Fig. 3.

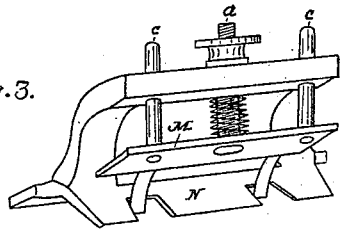


Fig. 4.

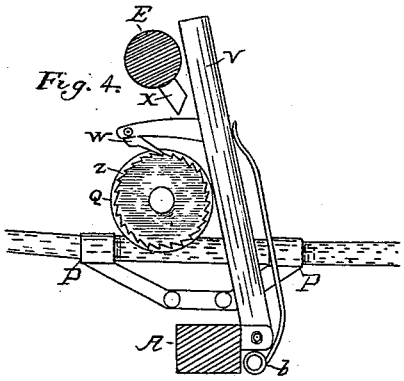


Fig. 5.

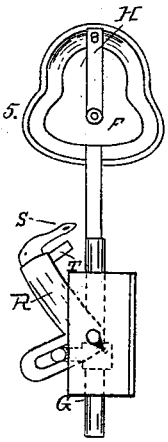


Fig. 6.

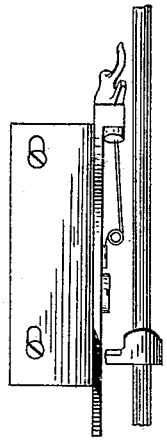
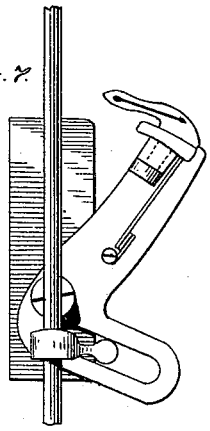


Fig. 7.



Attest
H. L. Middleton
Walter Donaldson

Inventor
George Gowing
By Ellis Spear
Attorney

UNITED STATES PATENT OFFICE.

GEORGE GOWING, OF OAKLAND, CALIFORNIA.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 262,586, dated August 15, 1882.

Application filed June 10, 1881. (Model.)

To all whom it may concern:

Be it known that I, GEORGE GOWING, of Oakland, county of Alameda, State of California, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My invention relates to sewing-machines; and it consists essentially of a sewing-machine adapted to move upon a cable, whereby the machine may be moved along the edge of the material to be sewed as the stitches are formed therein.

It consists, further, of certain details of construction adapted to carry out the principle of the invention in the best manner.

The object of the invention is to provide means for sewing heavy fabrics—such as carpets and the like—without moving the said fabrics during the operation of forming the seam therein.

In the drawings, Figure 1 shows an end elevation of the apparatus; Fig. 2, a front elevation; Fig. 3, an enlarged view of the plate which carries the presser-foot and needle-plate. Fig. 4 represents a side elevation, on a reduced scale, of the devices for giving intermittent motion to the machine upon the cable. Fig. 5 shows a face view of the cam-wheel and the lower needle. Fig. 6 is a detached view of the needle and the bell-crank lever which carries it; Fig. 7, a side elevation of the same.

In Figs. 1 and 2 the main frame of the machine is shown at A. It is provided with a grooved wheel, Q, pivoted as shown in Fig. 1, and adapted to bear upon a cable, O. This cable is to be stretched to a sufficient degree of tension to support the machine, and in proper position for the work thereof. The position of the machine upon the cable is shown in the first and second figures. From about the central part of the frame a bar, A′, extends downward, carrying at its lower end in suitable bearings a fly-wheel, *p*. The wheel Q is so placed in the frame of the machine and the arm and the fly-wheel extend so far below the cable that the machine is balanced upon the cable. The cable passes through guides P P, Figs. 1 and 4, said guides being fixed to the inner surface of the frame upon one side and just beneath the wheel Q, so that the said wheel presses upon the cable.

A driving-pulley, B, is mounted upon the frame, as shown in Fig. 1, and is provided with a gear-wheel, C, meshing into a smaller gear, D, which latter is fixed upon the shaft E, whereby motion is imparted to the wheel B by its crank, and is transmitted multiplied to the shaft E. The shaft E carries a grooved cam, F, shown in position in Fig. 1 and detached in Fig. 5. A pitman, H, is pivoted at its upper end to the needle-bar I, and its lower end is pivoted eccentrically to the face of the grooved cam, as shown in the figures, whereby the rotation of the shaft E causes the needle to vibrate up and down. The lower needle, S, is operated by a pitman, G, which is in connection, by means of a pin at its upper end, with the groove in the face of the cam F. These needle-pitmen are properly supported in bearings in the frame. An arm fixed adjustably by means of a set-screw near the lower end of G operates by means of a pin and bell-crank lever, R, pivoted upon the frame beneath the needle-plate, said connection between the arm and the lever being by means of a pin and slot, as shown in Fig. 5. The bell-crank lever R carries the lower needle, S, which is pivoted thereon, so to be capable of lateral movement, as shown by the edge view in Fig. 6. Fixed to the needle S, as shown in that figure, is a small arm, T, attached to the needle, preferably at the pivot Y, so that when the arm T in movement of the bell-crank lever impinges against the side of the projection U, placed upon a part of the frame, as shown in Fig. 1, it is turned slightly aside, and in turning pushes the needle S away from the path of the upper needle. This is done while the bell-crank lever is carrying the needle forward. The location of the bell-crank lever upon the frame is shown in Fig. 1.

The pitman G is held and moves in the guide *i* and in a part of the frame A. The shape of the cam-groove to which it is connected determines the movement of the lower needle in kind and amount. The relative position of the rod, needle, and bell-crank lever is shown more clearly in Figs. 1 and 2.

The operation of the under needle, S, is as follows: In its forward movement the lower

needle passes the upper needle in the required position to secure the loop of the upper thread. At the same time the arm T is brought in contact with the guide-block U, which guides it to one side by the still further and final forward movement of the bell-crank lever R, thus carrying the under thread to the opposite side and holding it until the return of the upper needle, which passes between the under needle and thread and completes the lock of the two threads.

The tension devices are shown clearly in the drawings, and differ from ordinary tension devices only as they are varied in position to correspond with the peculiar shape of the machine. The spool *h* is carried on an arm attached to the shaft of the fly-wheel *p*, and receives its proper motion therefrom.

The construction of the needle-plate and presser-foot is peculiar and specially adapted to this form of machine. It is shown in Fig. 1 in place, and in detached view and enlarged in Fig. 3. It consists of a plate, L, through slots in which it is held by screws on a ledge of the main frame A. It is provided with an elevated front portion, L′, to which is attached the presser-foot M by means of guide-rods, springs, and an adjusting-screw, *a*, as shown in Fig. 3, the guide-rods being marked *c c* and the springs *l*. The presser-foot is provided with arms *m*, inclining to the rear and interlocking with other inclined arms, *m′*, which connect with the needle-plate, the two sets forming, where they intersect, a guide for the edge of the fabric to rest against while it lies between the presser-foot and the needle-plate. The needle passes behind the elevated front portion, L′, and through the hole *o* in the needle-plate.

Movement of the machine upon the cable is effected by pawl and ratchet mechanism moved by the shaft E. On this shaft is a stud, *x*, which operates a pivoted lever, V, provided with a returning-spring, *b*. (Shown on a reduced scale in Fig. 4 and in place in Fig. 1.) The lever V carries an arm, W, to which is attached the pawl which engages with the ratchet-wheel Z, which is on the same shaft with the grooved wheel Q, being preferably fixed close to said wheel. The pawl is in engagement with this wheel, being held down either by gravity or by a spring, and as the stud on the shaft E throws the lever V forward it draws the pawl and turns the wheel, advancing the machine upon the cable a given distance. Any suitable adjusting device may be used to regulate the amount of distance advanced. This of course, as the fabric is held stationary against the guide and upon the cable, constitutes the feed of the machine.

The guide-box J is shown clearly in Fig. 2, and upon it nipping devices *d e k* in their proper connection with the thread. The other parts are also clearly shown, and as they are parts well known need no description.

The feed movements are timed to the movement of the needle, as in ordinary machines.

The operation of the machine is simple, and can be understood from the description hereinbefore given.

The machine is adapted to sew any kind of heavy fabric the lapped edges of which are stretched along by the side of the cable and can pass into the guide between the presser-foot and the needle-plate while the machine travels by a step-by-step movement, which step may be measured to the length of the stitch.

I am aware that a traveling sewing-machine has been supported by and moved upon the edge of the fabric to be sewed, and I do not claim such construction as my invention.

Having thus described my invention, what I claim is—

1. The combination, with a sewing-machine consisting of a main frame, a bracket, and fly-wheel, forming a balance-weight, needles and mechanism for operating the same, and a wheel to which step-by-step movement is imparted by mechanism substantially as described, of a supporting-cable, upon which said wheel bears, whereby the machine is moved bodily upon the cable, substantially as set forth.

2. The combination, with the main frame A, of the main drive-wheel and intermediate gears, the shaft E, and the supporting-wheel with its impelling mechanism, the cam F, the pitmen H and G, together with connections carrying the upper and lower needles, substantially as described.

3. The combination, with the pitman G, of the bell-crank lever R, needle S, arm T, and stud U, substantially as described.

4. The combination, with the plate L, arranged in described relation to the needles, of the presser-foot M, provided with arms *m* and the needle-plate and arms *m′*, substantially as described.

GEORGE GOWING.

Witnesses:
JOHN H. REDSTONE,
FRANK R. BRAUN.