



# UNITED STATES PATENT OFFICE.

HOWARD PRATT GARLAND, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN SEWING-MACHINES FOR STITCHING SACKS, &c.

Specification forming part of Letters Patent No. 159,812, dated February 16, 1875; application filed January 4, 1875.

### CASE B.

*To all whom it may concern:*

Be it known that I, HOWARD PRATT GARLAND, of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Machines for Sewing Sacks or Bags; and I do hereby declare that the following is a full, clear, and exact description of the same, so as to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

This invention relates to improved means for operating spiral needles in sewing-machines for sewing sacks or bags, and is intended as an improvement in the machine for which Letters Patent of the United States were granted to me November 3, 1874. It consists, mainly, in the employment of friction-rollers for actuating the needle, the spirals of the needle being serrated or notched on their edges, so as to engage the rollers; also, to notched disks, which are revolved by the spirals of the needle as it is turned, and to other details of construction and operation hereinafter set forth.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a plan with case containing one of the friction-rollers thrown back; Fig. 2, a front elevation.

In the open bed of the frame A are placed friction-rollers B B, composed of elastic or a semi-elastic material, such as gutta-percha or vulcanized india-rubber; yet I do not confine myself to any particular substance for the construction of these rollers, but prefer a semi-elastic material; yet wood will answer a very good purpose. These rollers are placed about one-half of an inch apart, and their ends are provided with gears C C, which mesh into each other. A slotted plate, D, partially covers these rollers, the opening being sufficient to receive the needle in which it is dropped. To the end of the machine is attached a slotted guide, E, under which the end of the sack to be stitched is placed. The inner end of the guide forms a case or spindle, E', around which the point of the needle turns, it being prevented from moving longitudinally or outward

by means of the collar E<sup>2</sup>. The outer edge of the spirals of the needle are serrated or notched, so that the beards or corrugations will engage the friction-rollers and the needle be rotated, as, otherwise, the spirals of the needle might slip on the rollers unless great pressure was brought to bear on the top roller, in which case more power would be necessary to drive the needle. In front of the needle is placed a series of notched disks, F. They overlap each other slightly from end to end, and are kept in place by pins *a a* and the flat raised plate G. These plates or disks are caused to turn by the action of the spirals of the needle, making progress in new notches at each revolution of the needle. In place of these notched disks F a flat thick band may be employed, having a series of pins projecting outward from it at intervals, which follow in the spirals of the needle, by which the band is caused to rotate in the same manner as that of the notched disks, the band being stretched around vertical pins or pivots placed in the bed-plate of the machine. The main object of the disks or pins is to prevent the edges of the sack from being carried down and impede the action of the needle as it makes the perforations in the cloth. An oblong case, H, open at the bottom, is hinged to the rear of the frame, in which a friction-roller, I, operates. This roller is brought down upon the needle when the machine is in operation, and the frame containing it kept in position by means of the spiral springs J engaging the curved arms J' of the frame. A lever or screw-clamp may be substituted for these springs to obtain sufficient or the required pressure to drive the needle. The end of this roller is provided with a toothed gear, K, which meshes into spur K', by means of which motion is communicated to it and the two friction-rollers B B beneath. Thus it will be seen that when the case H containing the roller I is in position over the needle, and power is applied to the crank or pulley L, the needle is revolved in the slot of the bed-plate by the combined action of the three friction-rollers, which engage the notches on the spirals. It should here be observed that the needle may

be constructed tapering from the heel to the point, which would prevent it from moving longitudinally in the slotted case when pressure from the rollers was brought to bear upon it. A sliding guide, M, provided with a forked end for carrying the thread, moves along the rod N from the point to the heel of the needle, the forked end being placed on the spirals at the point of the needle, and the thread having first been passed through a hole, *b*, in the end of the guide, and confined in the eye of the needle, the thread following the retaining-groove in the spirals.

In operating my machine, the edge or seam of the cloth to be stitched or sewed is placed under the guide E, and power applied to the machine, so as to cause the needle to be turned toward the operator, when the needle will commence to sew from its heel and continue its operation until the end of the sack is reached, or the thread is all removed from the retaining-coils, when it will be necessary to thread the needle again; yet the needle will sew three times its length without re-threading.

It should here be observed that in this my present device no reverse motion of the needle is necessary in order to tighten up the stitch.

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

1. The combination, with the roughened or notched edges of the spirals of the needle, of the rollers B B I, substantially as herein set forth and specified.

2. The notched disks F, in combination with the spiral needle, substantially as and for the purpose specified.

3. The oblong case H and friction-roller I, in combination with the spiral needle, the rollers B B, and springs J, substantially in the manner as herein set forth and specified.

4. The movable thread-guide, provided with the forked end and hole or opening *b*, in combination with the spiral needle, substantially as herein specified and set forth.

5. The stationary slotted guide E, provided with the collar E<sup>2</sup>, in combination with the spiral needle, as specified and set forth.

In witness whereof I have hereunto set my hand and seal.

HOWARD PRATT GARLAND. [L.S.]

Witnesses:

C. W. M. SMITH,  
PHILIP MAHLER.