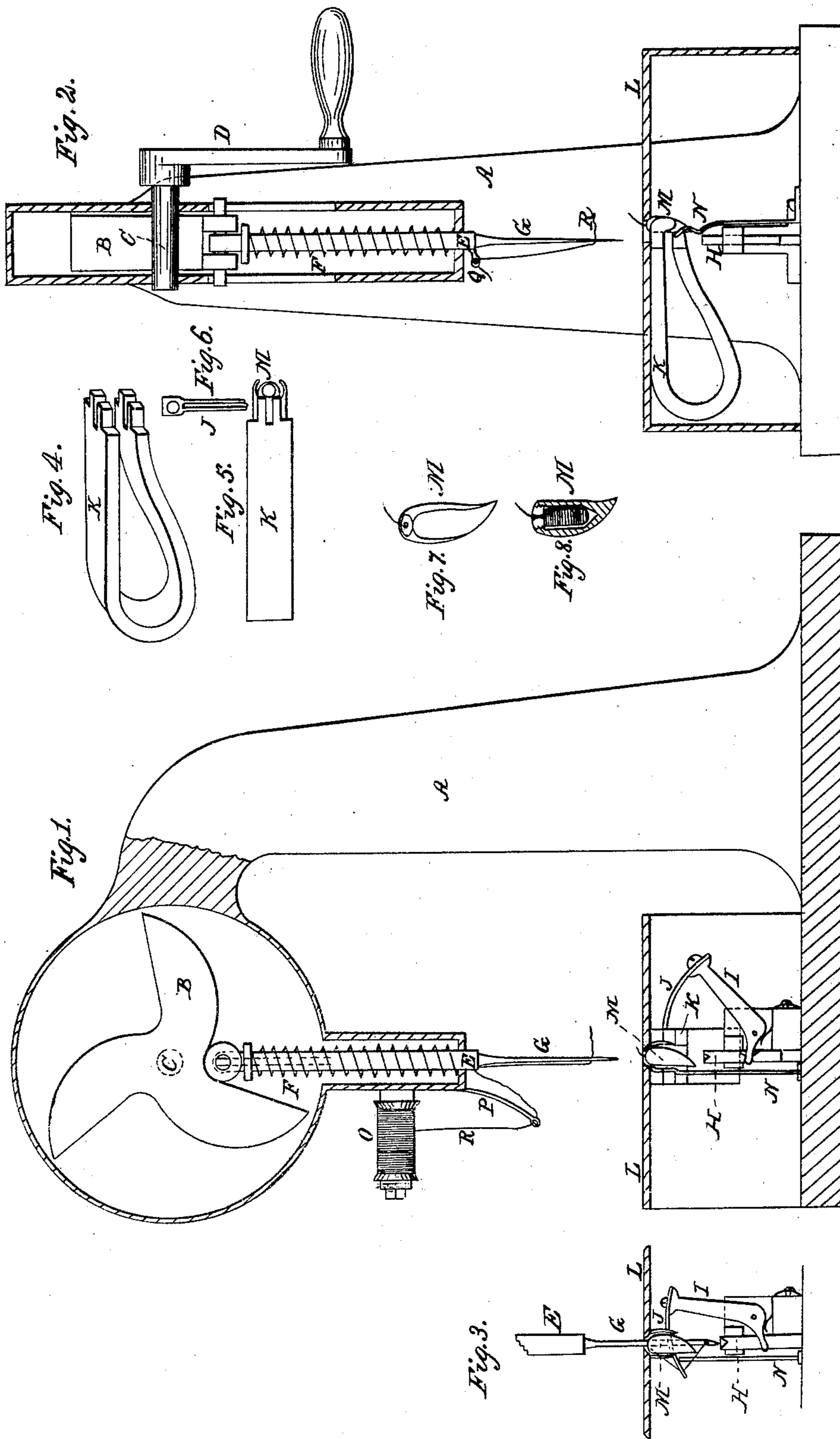


S. B. ELLITHORP.
Sewing Machine.

No. 17,366.

Patented May 26, 1857.



UNITED STATES PATENT OFFICE.

SOLOMON B. ELLITHORP, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 17,366, dated May 26, 1857.

To all whom it may concern:

Be it known that I, SOLOMON B. ELLITHORP, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention relates to the attachment of the primary power to give motion to the needle in direct connection with the needle-stock and in a vertical line with the needle, to actuating the movements to form the loop of the stitch by the point of the needle, to the manner of forming the loop of the stitch, and to the application of a magnet to hold and retain the bobbin in position.

Figure 1 in the accompanying drawings is a longitudinal vertical section, and Fig. 2 is a transverse vertical section, of my machine. Fig. 3 is a detached view of the looping operation. Fig. 4 is a perspective, and Fig. 5 a plan view, of the magnet detached. Fig. 6 is a plan view of the loop-former detached. Fig. 7 is a perspective, and Fig. 8 a vertical sectional view, of the bobbin detached.

A is the stand or body of the machine, made of cast-iron or other metal, and having a foot or bed piece to fasten to a stand or table, and a head-piece to receive and contain the moving-power to actuate the machine.

B is a wheel with a series of cam-shaped arms, the arms so shaped and curved upon one side as to produce the downward movement of the needle-stock with the least possible exertion of power, and on the other side so formed, with a radial line to the center of the wheel, as to permit the head of the needle-stock to return to its primary position after the point of the arm passes over it.

C is the shaft, upon which the wheel B is fastened and by which it is operated.

D is a crank attached to the shaft C, by which the wheel B is rotated.

E is the needle-stock, guided vertically in its movements by running through an aperture in the bottom of the case at the head of the stand, and by guides on its top sides running through vertical apertures made in the sides of the case. It has friction-rolls upon its up-

per end, which bear against the curved sides of the arms of the wheel B, to lessen the friction incident to the contact of the two, and has an attached spring, F, to restore it to its primary position after passing the points of the arms of the wheel, as mentioned.

G is the needle, inserted in the lower end of the needle-stock, and having an eye formed in it above its point to receive and guide the thread.

H is a slide standing in vertical line with the needle, and retained by and working in suitable guides, which has an aperture or opening in it to receive the point of the loop-lever I, and which, with the attached lever, is operated and moved forward by the point of the needle coming in contact with its head or upper end, and is returned to position by a spring or other mechanical appliance.

J is the loop-former, attached to the upper end of the lever I, having a shoulder which catches the thread after it passes through the cloth and forms it into a loop.

K is a magnet secured to the under side of the brace L, which brace forms a bed upon which the platform or table upon which the article to be sewed is placed, having apertures formed between the projecting points at its ends, through which the needle passes, and having projecting points at its ends to hold and retain in position the metallic bobbin M, which bobbin has a flattened surface on one side, to be placed in contact with the ends of the magnet, and the other and opposite side formed of such curve as to permit the loop, after it is formed, to pass readily over it. The interior of the bobbin is recessed to hold a small spool or roll of thread to be taken in between the loop of the thread from the needle to lock or fasten it to place.

N is a spring-catch, over the point of which the thread from the needle is forced by the downward movement of the needle to pass over the point of the bobbin on the upward movement of the needle.

O is the spool containing the supply of thread to be used in the needle.

P is a brace having an eye at its end, through which the thread passes on its way from the spool to the needle.

Q is an eye formed upon the bottom of the needle-stock, through which the thread passes from the last-named eye to the eye of the nee-

dle, and which serves to tighten the thread in the seam at and by the upward movement of the needle-stock.

R is the thread from the spool O, passing through the eye in the brace P, the eye Q, and the eye of the needle.

The operation of the machine is as follows: The article to be sewed being placed upon the bed or table placed upon the brace L and the spool O, and the spool or roll of thread in the body of the bobbin being put in place, and the thread from the former being put through the eye of the needle, by revolving the cam-wheel B by the crank D, the needle and its attached thread is forced through the article to be sewed, and the point of the needle actuates the looping-lever I and moves the loop-former J forward to catch the thread carried through the cloth by the needle and form it into a loop over the point of the bobbin M through the action of the spring-catch N, the upper end of the bobbin being released from contact with the upper end of the magnet by the thread being drawn between them, while the lower end of it is retained in place by the lower end of the magnet, and the lower end is released, while the upper one is held by the continued

movement of the needle and thread; and on the upward movement of the needle-stock and needle the thread from the needle is brought up over the rounded surface of the bobbin and incloses the thread from the spool of the bobbin and completes the stitch. The feeding movement, to feed the cloth to be sewed and move it a regular distance for the insertion of the needle, may be effected by the employment of any one of the plans at present in use for that purpose.

The advantages of my machine are that it can be manufactured at a low cost, that it occupies but little space and operates with little power, while it effects its work as perfectly as machines of greater cost and complexity of parts now in use.

What I claim as my invention, and desire to secure by Letters Patent, is—

The attachment of the primary moving-power to give motion to the needle in direct communication with the needle-stock and in vertical line with the needle.

S. B. ELLITHORP.

Witnesses:

M. HASKELL,
FRANCIS S. LOW.