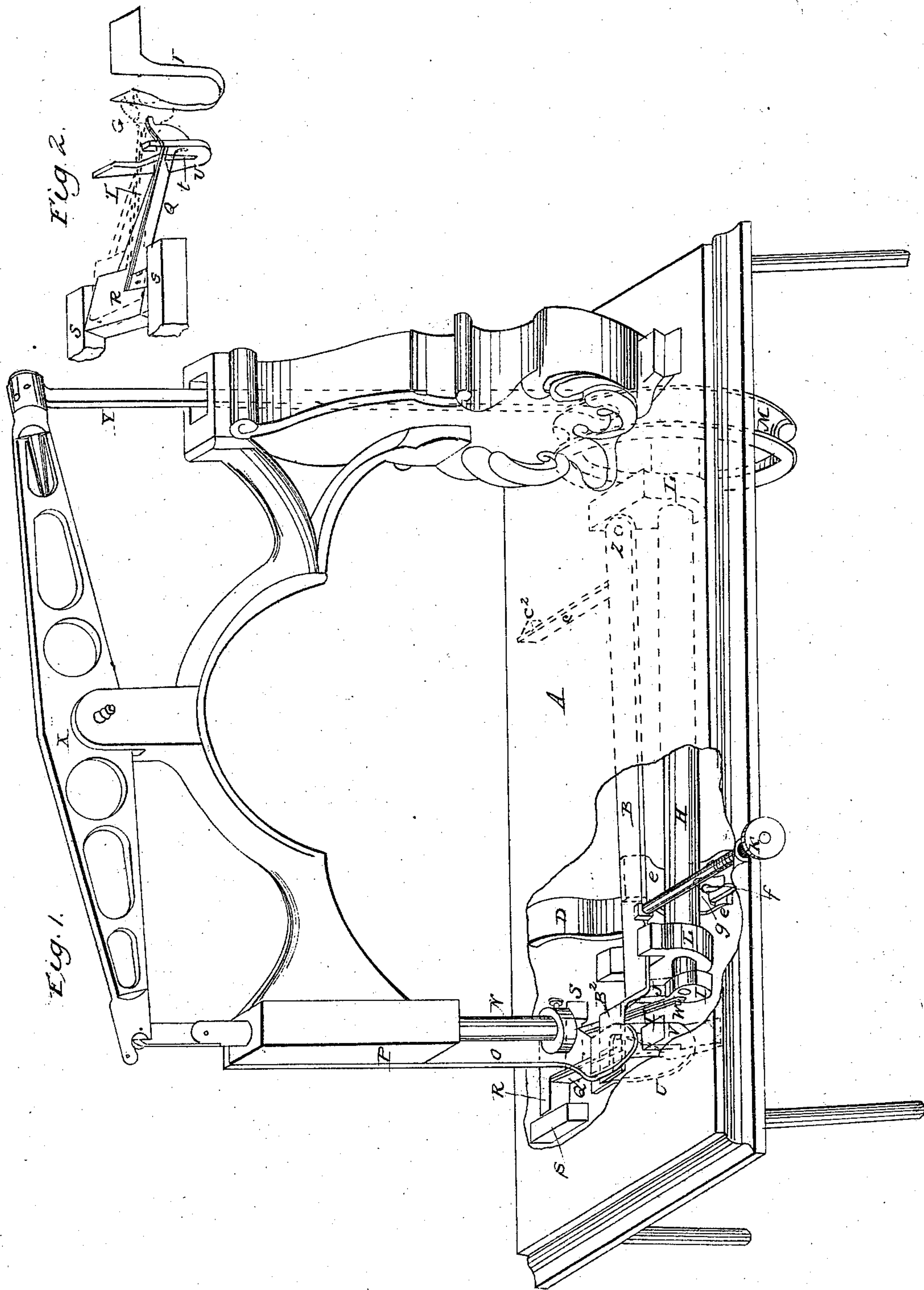


C. MOORE.
Sewing Machine.

No. 21,015.

Patented July 27, 1858.



Attest.
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 21,015, dated July 27, 1858.

To all whom it may concern:

Be it known that I, CHARLES MOORE, of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention relates, first, to an improvement in the feeding mechanism; second, to an improvement in the looping mechanism.

Figure I is a perspective of a machine showing my improvements. Fig. II is a perspective of the looping mechanism.

A, Fig. I, represents the bed-plate of the machine. A portion of this plate is cut away in order to show more distinctly the construction and arrangement of the feeding and looping mechanism.

B represents the feed-plate. This is pivoted to the under side of the bed-plate, as represented at *a*. It extends along the bottom of the bed-plate, and has an offset or face which extends upward through the plate, as represented at *B*². The cloth or material to be sewed rests or is supported upon this face *B*². A small slit is made through this part of the feed-plate, through which slit the needle passes when it punctures the cloth. This face performs the combined functions of pressing the cloth equally upon both sides of the seam or line of stitch in the act of feeding, and thus insures the movement of the cloth in a direct line without any tendency to twist or wrinkle the cloth, and also supports the cloth equally upon all sides against the puncture of the needle.

c is a spring which is connected to the feed-plate and bracing against the pin *c*². This spring gives the feed-plate a lateral movement in the opposite direction to the cam I on the end of the driving-shaft.

D is a spring connected to the bed-plate, and, dropping down, passes under the feed-plate and driving-shaft, and through a slot in the hanger *e*. One object of this spring is to insure a yielding compressing of the feed-plate upon the cloth, which will adapt itself to any thickness of cloth.

e is a hanger connected to feed-plate (or feed-

bar) B; *f*, nib projecting from the spring D. *g* is a small cam on the driving-shaft, which strikes the nib *f* at the proper time, and by means of the arrangement of the spring D and hanger *e* the required downward movement is given to the feed-bar.

H is the driving-shaft.

I is a cam on the end of the driving-shaft.

J is a nib projecting downward from the feed-bar B. The cam I strikes against this nib and gives the requisite lateral movement to the feed-bar to move the cloth or material to be sewed the distance of one stitch forward; K, set-screws by which the length of the stitch is regulated; L L, hangers which are cast onto the bed-plate for the support of the driving-shaft; M, driving-pulley; N, needle-shaft.

O is a foot-piece. This is made adjustable on the shaft-head P, but is stationary and unyielding when the machine is in operation. A slot is made in this foot-piece corresponding to the slot in the feed-bar, so that the needle passes through the foot-piece, feed-bar, and cloth at the sametime; P, head or cylinder guide for needle-shaft; X, walking-beam; Y, crank-shaft connected to driving-pulley and walking-beam; *t*, tapering slit in hanger U, in which the looping-springs work.

Q, Fig. II, is an expanding spring-looper. Two springs are made with points which enter the loop, as represented in the drawings. They are placed side by side, and made fast to the sliding head R.

S S are guides which are cast on the under side of the bed-plate. These guides have a groove cut therein to receive pins which project from the head R, and allow it to take a reciprocating right-line motion and an oscillating movement. The dotted lines show the looping-springs in their highest position.

T is a connecting-rod. This has a rigid connection to the sliding head R, and works on a crank-pin, W, projecting from the cam I.

U is a hanger having a tapering slit for the purpose of bringing the two points of the looper together at the time they pass between the needle and thread. The springs work in this slit. When dropping down to the lower part of the slit, they close together, and when they rise they expand and spread the loop.

V is a spring, against which the points of the looper strike as they pass between the nee-

dle and thread. It serves the purpose of preventing the thread from slipping off from the points of the looper.

The operation of the looping mechanism is as follows: Motion is communicated thereto from the driving-shaft H through the crank-pin W and connecting-rod T. The connecting-rod having a rigid connection to the head R, and the looping-springs also having a rigid connection thereto, it is evident that a lateral movement will be given to the head R and also to the looping-springs equal to the diameter of the circle described by the crank-pin. It is also evident that the points of the looping-springs will describe a circle. This movement will cause the springs to rise and fall in the tapering slit in the hanger U, and when dropping into the lower part of the slit they are brought together, so that their points will pass into the loop as one. As the springs rise, they gradually expand and take up all the slack in the loop. The springs are made sufficiently expansive to spread the loop to its limit, and yet so delicate as to yield to the thread, whatever may be the size of the loop. As the points of the looping-springs pass into the loop, they strike against the spring V, and the spring V continues to press against the points until the needle has passed into the loop, and until the points recede past the needle, thus preventing the thread from slipping off the points.

The operation of the feeding mechanism is deemed to be already sufficiently described.

I do not claim the feed-plate herein described, nor the combination thereof with either function it performs, when said functions are separately considered. Neither do I claim any part of the mechanism, nor any combination thereof, by which the feed-plate is operated, or by which either function thereof is produced, when separately considered; but

What I do claim is—

1. The elastic compression feed-plate B, when constructed with an offset or face, B², which projects through the bed-plate, and performs the combined functions of supporting the cloth equally upon all sides against the puncture of the needle, and of producing an equal pressure upon the cloth upon both sides of the seam or line of stitch when in the act of feeding, substantially as herein described.

2. The self-expanding looping-springs Q, arranged and operating as described, in combination with the slotted hanger U and spring V, for the purposes substantially as herein set forth.

CHARLES MOORE.

Witnesses:

W. D. DELEVAN,
W. H. FURBUSH.