

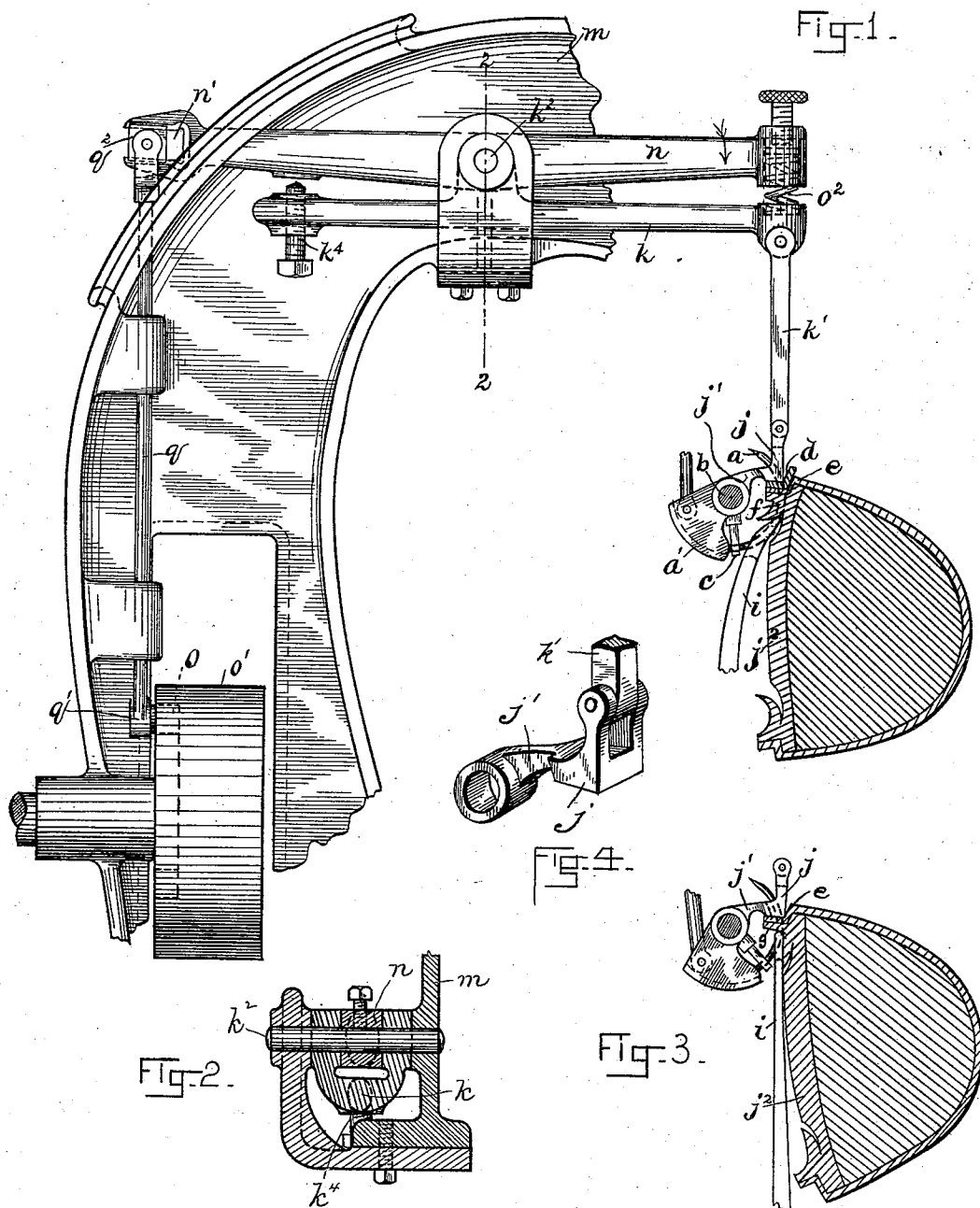
(No Model.)

C. S. GOODING.

WORK COMPRESSING MECHANISM FOR SEWING MACHINES.

No. 488,629.

Patented Dec. 27, 1892.



WITNESSES:

Minnie and Jackson.
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INVENTOR:

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by Night & Son, Attys.

UNITED STATES PATENT OFFICE.

CHARLES S. GOODING, OF BROOKLINE, ASSIGNOR TO THE SEAVER SEWING MACHINE COMPANY, OF BOSTON, MASSACHUSETTS.

WORK-COMPRESSING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 488,629, dated December 27, 1892.

Application filed January 18, 1892, Serial No. 418,429. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. GOODING, of Brookline, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Work-Compressing Mechanism for Sewing-Machines, of which the following is a specification.

This invention relates chiefly to sewing machines of the curved needle type, and particularly to machines for sewing welts and uppers to the inner soles of boots and shoes.

The invention has for its object to provide means independent of the stitch-forming mechanism for utilizing the power of the machine in compressing the parts which are being sewed together at the point where the needle passes through said parts, so that said parts may be held closely together by the stitches without subjecting the needle and the thread to the strain required in pulling or drawing said parts together, as in sewing machines as heretofore constructed.

The invention consists mainly in the combination with the stitch-forming mechanism of a sewing machine, including a curved needle, of a work support suitably arranged in relation to said needle, a work clamp or jaw arranged to oscillate on a fixed stud or bearing, and connections between said jaw and the driving-shaft of the machine whereby the jaw is positively oscillated and caused to intermittently compress the material against the work support, said connections including a spring which acts to give the jaw a yielding pressure when it is compressing the material.

Of the accompanying drawings, forming part of this specification: Figure 1 represents a side elevation of a portion of a sewing machine provided with my improvements, the needle support or bearing being shown in section. Fig. 2 represents a section on line 2—2, Fig. 1. Fig. 3 represents a view of a part of the mechanism shown in Fig. 1, showing a different form of work-support. Fig. 4 represents a perspective view of the movable clamp detached.

The same letters of reference indicate the same parts in all the figures.

In the drawings: *a* represents the curved needle, attached to an arm *a'*, which oscillates

on a stud or bearing *b*, and may be adapted to co-operate with a cast-off *c* and a looper (not shown), in forming a chain of stitches uniting the welt *d*, upper *e* and "between substance" *f* of a welted boot or shoe, shown in Fig. 1; or the upper *e* and inner-sole lip *g*, as shown in Fig. 3; the last-named figure representing the operation of lasting the upper by stitching the same to the lip *g* in accordance with the invention set forth in Letters Patent of the United States dated January 26, 1892, for welted boots and shoes and the art of making the same.

I do not show the mechanism for oscillating the needle and the cast-off, nor the other essential parts of the stitch-forming mechanism, such mechanism being well-known and therefore requiring no description.

i represents a work-support, which, as shown in Fig. 1, is formed to enter the channel in the inner sole *j*² and support the work against downward pressure. The work-support shown in Fig. 3 is formed to bear on the under side of the lip *g*. Said work-support is arranged in such relation to the needle that the needle will properly locate the stitches in the work bearing on the support.

j represents the jaw or clamp which co-operates with the work-support in compressing the work. Said jaw is preferably formed on an arm *j'*, which is adapted to oscillate on the stud *b* beside the needle arm, the jaw being preferably arranged in the path of the needle, so that it will bear on the welt *d*, as in Fig. 1, or the upper *e*, as in Fig. 3, around the point where the needle, in making its forward movement, emerges from the upper surface of said welt or upper, the jaw having an orifice which permits the needle to pass through the jaw.

k represents an arm or bar, which is pivoted at *k*² to the supporting-frame or arm *m* of the machine, and is connected at one end with the jaw *j* by a link *k'*, the opposite end of said bar being adapted to bear against an operating lever *n*. Said lever is also pivoted at *k*² and receives a positive oscillating movement from a cam-groove *o* in a disk *o'* on the driving-shaft *p*, through a connecting-rod *q*, having at one end a trundle-roll *q'* engaged with said cam-groove, and at its other end a pivoted block *q*², fitted to slide in a slot *n'* in one end

of the operating lever n . The other end of said lever is provided with a spring o^2 , which constitutes a yielding connection between the operating lever and the bar k . It will be seen 5 that, when the spring-carrying end of the lever n is depressed, a movement in the same direction is imparted to the bar k , and from the latter through the link k' to the jaw j . Said jaw is thus depressed and caused to com- 10 press the parts of the boot or shoe lying between it and the work-support. The spring o^2 is sufficiently stiff to make the downward movement of the jaw j by the lever n positive, unless the thickness of the material be- 15 tween the jaw and work-support is such as to prevent the depression of the jaw during the entire downward movement of the lever, in which case the spring yields sufficiently to prevent injury to the material and to the mechanism. The downward movement of the jaw 20 is timed to compress the material while the needle is drawing the thread through the material and setting the stitches, the jaw being raised while the needle is out of the material 25 and the work is being fed.

It will be seen that by the employment of an independent jaw and connections between said jaw and the driving-shaft of the machine, whereby the jaw is positively pressed 30 toward the work-support and held while the stitch is being set, I am enabled to compress the material and hold it compressed, so that the stitches will hold the united parts in close contact with each other, without subjecting 35 the thread and the needle to the strain that would be involved if the duty of drawing said parts together devolved wholly on the needle and thread, as in all sewing machines of this class now in general use.

40 When the spring-carrying end of the lever n is raised, its other end, in its descent, strikes a stud or screw k^4 on the bar k , thus raising the end of said bar which is connected with the jaw j .

45 I do not limit myself to the described means or devices for positively moving the jaw j , but may use any other suitable mechanism adapted to impart positive movement to said jaw in the direction required to compress the material against the work-support.

50 An advantage resulting from my improvement is that the employment of the jaw or

clamp imposes no additional work on the machine when the clamp is raised from contact with the work. A machine provided with a 55 presser-foot of ordinary construction is required to perform the additional service of raising the presser-foot and holding it raised against the pressure of its depressing spring. This is not required in a machine provided 60 with my improvement.

The force or pressure exerted by the ordinary presser-foot is at its minimum when the presser-foot is bearing on the work, the pressure increasing as the presser-foot is raised. 65 In my improved machine, the pressure exerted by the jaw or clamp is greatest when the clamp is bearing on the work.

I claim:

1. The combination with the stitch forming 70 mechanism of a sewing machine, including a curved needle, of a work-support, suitably arranged in relation to said needle, a work-clamp or jaw, arranged to oscillate on a fixed stud or bearing, and connections between said 75 jaw and the driving-shaft of the machine, whereby the jaw is positively oscillated and caused to intermittently compress the material against the work-support, said connections including a spring which acts to give the jaw 80 a yielding pressure when it is compressing the material, as set forth.

2. The combination with the stitch-forming mechanism of a sewing machine, including a 85 curved oscillating needle, of a work-support, suitably arranged with relation to the needle; a work-clamp or jaw, arranged to oscillate on a fixed stud or bearing; a rocking-bar, pivoted to the frame of the machine, and connected at one end with said jaw; a pivoted operating 90 lever, and means for positively oscillating the same by the power of the machine; and a spring, interposed between said lever and bar, whereby the jaw or clamp is permitted to yield in conformity to the thickness of the 95 material on which it bears; as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 8th day of January, A. D. 1892.

CHARLES S. GOODING.

Witnesses:

C. F. BROWN,
A. D. HARRISON.