

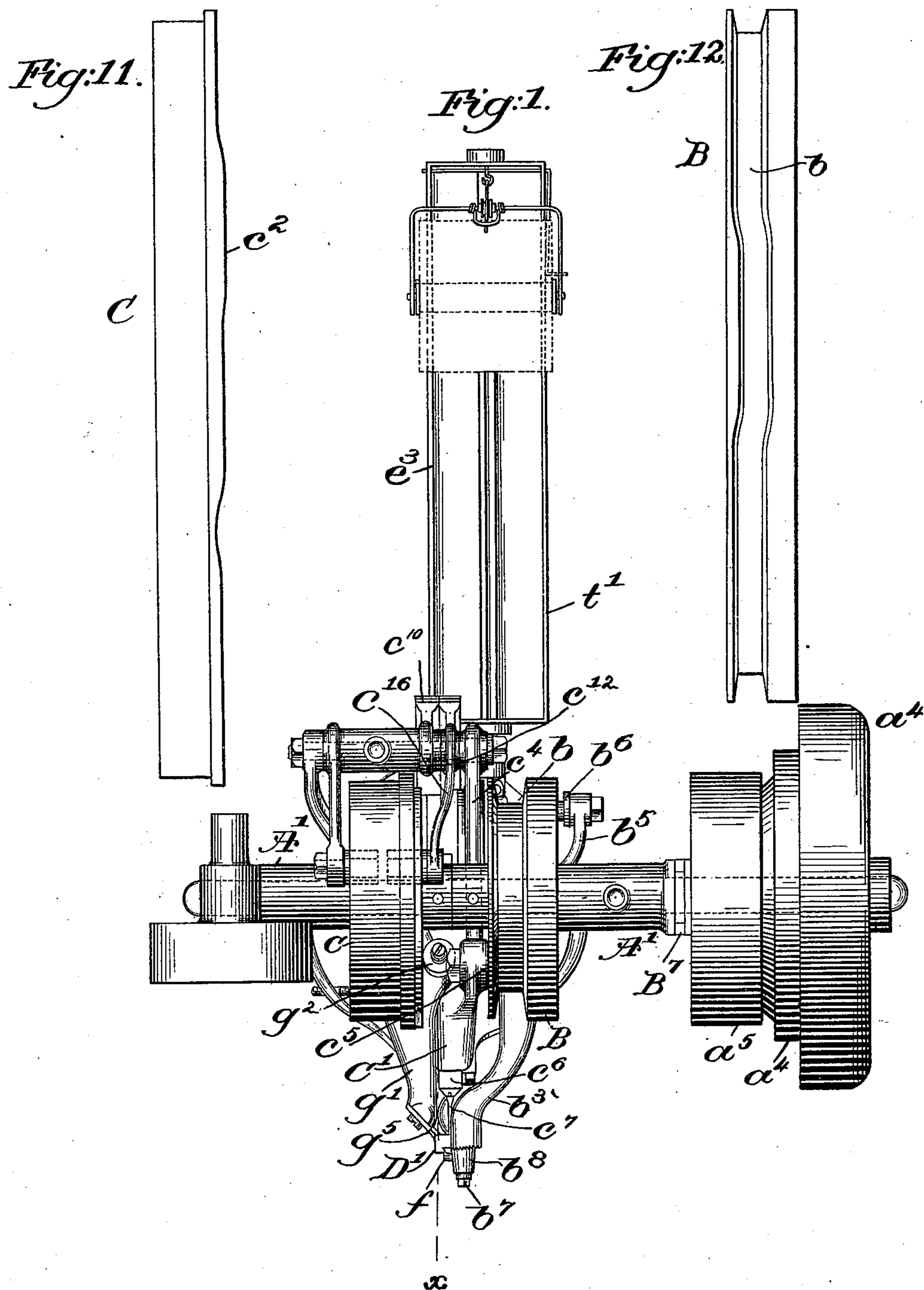
(No Model.)

4 Sheets—Sheet 1.

L. GODDU.  
SOLE SEWING MACHINE.

No. 545,483.

Patented Sept. 3, 1895.



*Witnesses.*

Fried S. Gumbaf.

Thomas Drummond.

*Inventor:*

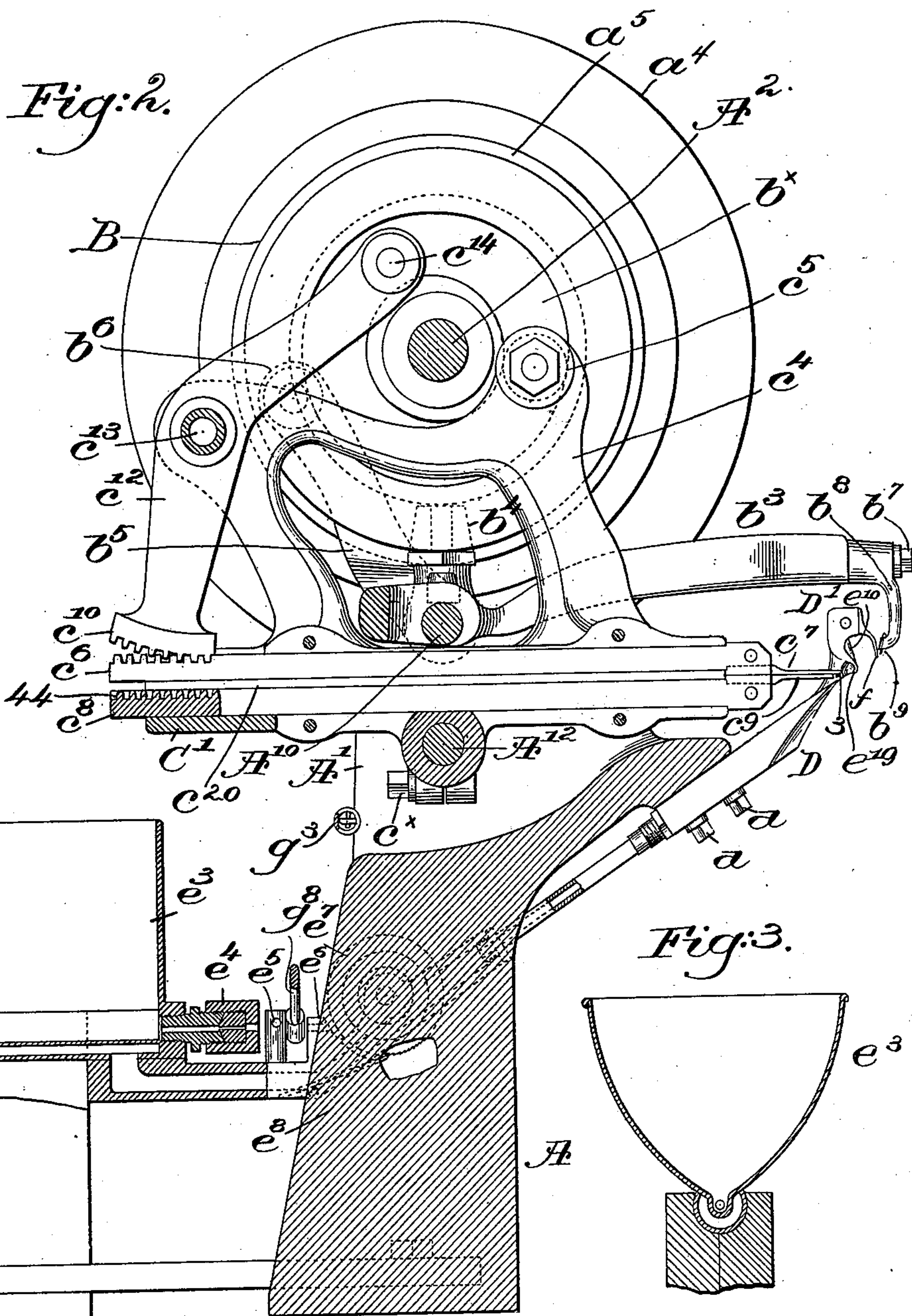
*Louis Goddard.*

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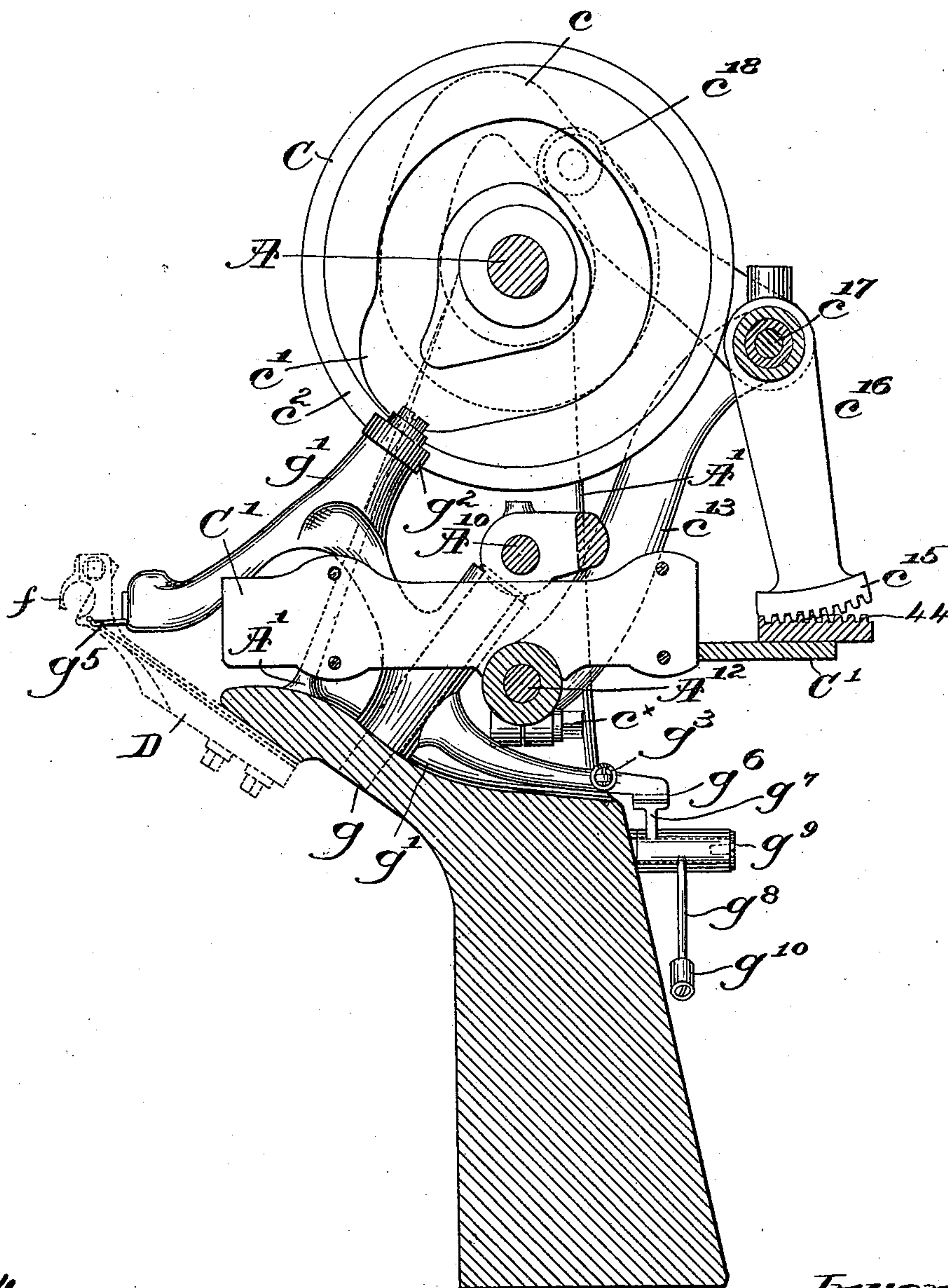
4 Sheets—Sheet 3.

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*Fig. 4.*



*Witnesses.*

*Fred S. Gumbaf.*

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*Inventor.*

*Louis Goddu,*  
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*attys.*





# UNITED STATES PATENT OFFICE.

LOUIS GODDU, OF WINCHESTER, ASSIGNOR TO JAMES W. BROOKS, TRUSTEE,  
OF PETERSHAM, MASSACHUSETTS.

## SOLE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,483, dated September 3, 1895.

Application filed January 22, 1894. Serial No. 497,696. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS GODDU, of Winchester, county of Middlesex, State of Massachusetts, have invented an Improvement in  
5 Wax-Thread Sole-Sewing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object the production of a novel sewing-machine adapted more especially for connecting the uppers and soles in what is called "turned work," and for uniting welts to uppers and soles in what is  
15 called "welted work."

My improved machine contains a thread-pusher adapted to engage a thread and push it in doubled form into a hole made in the material, a rest against which the upper is  
20 pressed and held by the operator near the point where the pusher is to enter the material, and a pitch-gage to bear upon the sole and determine the proper inclination of the sole with relation to the movement of the awl  
25 and pusher. With the above devices I have combined a puncturing-feeder provided with one or more pins, which enter the substance of the sole nearly opposite the line of movement of the awl and pusher into the sole, the  
30 said feeder having preferably two pins located at a little distance apart to confine the material at each side the hole to be made by the awl, which hole is to be filled with thread by the action of the pusher.

35 My machine has a peculiar combined work-rest and thread-guide, the construction being such that the rest presents a corner or portion against which the part of the upper in line with the shoulder formed in the sole near  
40 its edge may bear, so as to insure firm contact of the upper with the sole, and just back of said corner or portion there is a pocket or space, into which may enter one end of a thread-measuring device, which engages one  
45 side of the thread used and draws it out for a length sufficient for the next stitch to be made, such measuring of the thread being for the purpose of preventing the scraping of the pusher upon the thread in the process of pushing the latter into a hole in the material.

A shoe made on my improved machine will

have its upper and sole united by a single waxed thread, the thread being doubled upon itself at intervals to form staple-like loops, the said loops being concealed in the sole between  
55 its inner and outer sides, thus obviating a wale or chain of loops at the inner face of the inner sole, as in through and through work or McKay work, which must of necessity be covered with an inner sole, and, further, a shoe made by my improved machine  
60 does not necessitate the making of a channel within that part of the sole to which the upper is stitched, and consequently such shoe is not weakened by a channel at the point where  
65 the greatest strain is exerted between the upper and the sole.

In my improved machine each stitch is finished before another is started.

One part of my invention consists in a sole-  
70 sewing machine, containing the following instrumentalities, viz: a work-rest to support the upper at or near the edge of the sole; a thread-delivery; a device to pull off and hold distended, at the side of the pusher adjacent  
75 the last stitch made, a quantity of thread for the next stitch; a thread-pusher to engage said distended thread, said device and the thread-pusher being located at the same side of the work-rest, and means to actuate said  
80 pusher and thread distending and pulling-off device, to operate substantially as will be described.

Other features of my invention will be hereinafter described, and pointed out in the  
85 claims at the end of the specification.

Figure 1 is a plan view of a sewing-machine embodying my invention. Fig. 2 is a partial vertical section in the line  $x$ , Fig. 1, said figure being, however, on an enlarged scale. Fig.  
90 3 is an enlarged section in the line  $x'$ , Fig. 2, looking from the left; Fig. 3<sup>a</sup>, a detail of the feeder to show its two points. Fig. 4 is an enlarged section in the said line  $x$ , but looking from the right, the thread-guide and work-  
95 rest, which would not be shown in said section, being represented by dotted lines to facilitate a better understanding of the machine. Fig. 5 is a detail of the cam employed for raising and lowering the puncturing-feeder. 100  
Fig. 6 is a sectional detail showing the thread-guide, the awl, and the pusher, together with



the pitch-gage employed to determine the pitch or inclination of the sole with relation to the awl and pusher, said figure also showing part of the thread-guide and the work-rest.

Fig. 7 is an enlarged detail of the thread-measuring device. Fig. 8 is an enlarged detail in front elevation of the thread-guide, work-rest pitch-gage, and loop-measuring device. Fig. 9 is a perspective detail of the upper portion of the thread-guide, it showing the work-rest and pitch-gage. Fig. 10 is a detail of the pull-off for pulling the thread from the wax-cup preparatory to delivering the same to the thread-tension device. Fig. 11 is a developed view of cam C. Fig. 12 is a developed view of the cam B. Fig. 13 is a detail showing a part of the sole and upper of a turned shoe in position to be stitched. Fig. 14 shows part of a welted shoe in position to be stitched. Fig. 15 shows a piece of upper and sole cut to show the stitches embedded in the same; Fig. 16, a section in the line  $x^3$ , Fig. 15. Fig. 17 shows the pusher detached. Fig. 18 is a diagram showing a piece of a shoe, together with the measuring device, the latter holding the thread distended, ready to be acted upon by the pusher.

Referring to the drawings, A represents a part of a column adapted to be supported on the floor, said column having suitable up-rights  $A'$ , provided with suitable bearings for the working parts. The main shaft  $A^2$  has fast upon it a cam B, provided at its periphery with a cam-groove  $b$ , at its outer side with a cam-groove  $b'$ , (shown best in Fig. 5,) and at its inner side with a cam-groove  $b^x$ . (Represented in Fig. 2.) The main shaft has also fixed upon it a cam C, provided at one side (see dotted lines, Fig. 4) with a cam-groove  $c$ , and at its other side with a cam-groove  $c'$ , (see full lines, Fig. 4,) the said cam also having at its inner side near its periphery a cam ledge or projection  $c^2$ . (Shown best in Fig. 1.) The main shaft has also upon it two members  $a^4 a^5$  of a clutch-pulley of well-known or usual construction, one half, as  $a^4$ , of said clutch-pulley being made fast upon said shaft, the other half being loose thereon, the faces of said pulleys being conical in shape, the loose pulley being adapted to be moved longitudinally upon said shaft by or through a suitable fork  $B^7$ , connected in practice with a suitable treadle located at or near the floor, all as provided for in United States Patent No. 265,227, dated September 26, 1882. The operator may, whenever desired, cause the clutch-pulley parts to be engaged and thus rotate the shaft  $A^2$  or may leave one member of the clutch-pulley loose on the shaft and the other at rest, the loose member being run continuously from a belt on some suitable counter-shaft. I have not herein shown the means for controlling the clutch-pulley, as the same are old and common to said patent.

The frame of the machine, in this instance of my invention, is shown as having fixed to

it by suitable set-screws  $d$  a plate D, represented as having along one edge a thread-receiving groove or passage  $d'$ , (see Fig. 8,) said groove terminating in a thread-delivery or hole 3, located close to and just back of the narrow work-rest  $e$ , having a rather abrupt corner, (to be described,) said thread-delivery being just back of a pocket  $d^2$ , made in the plate D, said pocket being herein represented as open at its front side just below and behind the acting corner of the said work-rest. This work-rest, in this instance of my invention, is represented as stationary, and it is shown as in one piece with the plate D, which plate also, as herein shown, by its groove and hole constitutes a guide between the tension device  $e^7$  and the thread-measuring device (to be described) for the thread to be delivered to the thread-pusher, as will be described. The corner of the work-rest  $e$ , when turned shoe-work is being done, contacts directly with the upper  $u$  or with its lining—the upper being wrong side out upon the last—at a point directly opposite a shoulder 4, (see Fig. 13,) formed near the edge of the inner sole  $s$ , said shoulder being formed either by removing a part of the stock at or along the edge of the sole or in any other usual way. In welt-work, however, the corner of the work-rest will bear on the welt  $w$  laid on the upper, but the pressure will be exerted, as before, through the upper to hold a portion thereof firmly against the shoulder, as before described, as it is essential for good work that the upper and the sole, directly at the stitch-making point, should be pinched and held firmly together during the formation of a stitch.

The work-rest  $e$  (see Fig. 6) has a suitable notch or opening, as  $e'$ , constituting a throat for the passage of the awl  $c^7$  and the thread-pusher  $c^8$ .

The pocket  $d^2$ , represented as lying just back of the acting edge of the work-rest, is adapted to be entered by the hooked end of a thread-measuring device  $g^5$ , to be more fully described, which device engages the thread between the thread-delivery 3, where it leaves the plate D near one side of said pocket and the shoe at the last stitch made, the said measuring device serving to draw through the thread-delivery or guide and the tension device enough thread for the next stitch to be made.

Above the work-rest I have placed a pitch-gage  $f$ , it, in the manner in which I have chosen herein to show the same, being made vertically adjustable in an extension  $D'$  of the plate D, said pitch-gage being held in adjusted position by a suitable screw  $f'$ . The pitch-gage bears upon the sole to which the upper is being stitched at a point between the edge of the upper and the median line of the sole on the last and constitutes a stop for said sole, the vertical adjustment of the pitch-gage determining the angle of presentation of the work to the awl and thread-pusher, and con-



sequently the angle or inclination of the stitch in the sole, the main body of said stitch being concealed in said sole between its inner and outer sides, as best represented in Fig. 15. The thread  $e^2$  will be led preferably from a suitable ball or bobbin through a wax-pot  $e^3$ , where it will be thoroughly saturated, and then out through a suitable orifice in a plug  $e^4$ , (see Fig. 2,) which by friction smooths and  
 10 wipes from the thread in usual manner the superfluous wax, the thread passing preferably under a suitable pin  $e^5$ , thence through a guide hole or eye  $e^6$ , attached to the frame, and about a suitably-rotating tension device  
 15  $e^7$ , (shown only by dotted lines, Fig. 2,) a suitable pawl  $e^8$  acting, preferably, upon a ratchet-wheel connected to or forming part of said tension device, said pawl preventing any backward rotation of the tension device, while  
 20 the thread is being pulled from the wax-pot, by a suitable pull-off, to be described, which acts to supply a quantity of slack thread at the rear side of the tension device, so that the thread-measuring device, which measures off  
 25 the thread to be acted upon by the said pusher, has to overcome only the resistance offered by the tension device, or, in other words, the thread-measuring device does not have to pull the thread from the ball or cop  
 30 used.

The framework has a suitable shaft  $A^{10}$ , upon which is mounted a feed-dog carrier  $b^3$ , adapted to be rotated about and also moved longitudinally on said shaft and provided with  
 35 a suitable roller or other stud  $b^4$ , preferably of conical form, as shown by dotted lines in Fig. 2, said stud entering the groove  $b$  in the cam B, said feed-carrier having an extension or arm  $b^5$  provided with a suitable roller or  
 40 other stud  $b^6$ , which is adapted to enter a cam-groove  $b'$  in the cam B. (See Fig. 5.) At the outer end of this feed-carrier I have, in this instance of my invention, connected, as by a bolt  $b^7$ , a puncturing-feeder, composed,  
 45 as shown, of a finger  $b^8$ , provided with one or more sharp pins  $b^9$ , which are adapted to enter the stock as closely as possible to the pitch-gage, said pins being preferably inclined backwardly from said pitch-gage. I shall  
 50 preferably use two pins, and besides performing the function of entering the sole to feed the same said pins, by penetrating the stock at each side of the line of motion of the awl and thread-pusher while entering the stock,  
 55 serve to prevent displacement of said stock at the point where the said awl and pusher act, the avoidance of displacement being very desirable and quite essential, especially in thin and soft leather. As the outer end of  
 60 lever  $b^3$  is moved downwardly by cam  $b'$  in the arc of a circle about the center of shaft  $A^{10}$ , the pins  $b^9$ , which are inclined downwardly and backwardly toward the work-rest, insure the pressing of the work toward and  
 65 firmly against the work-rest, thus supplementing the pressure exerted by the operator in

that direction, the operator holding the shoe in his hand, the feeder, by its downward action, as described, securing a closer and more uniform setting together of the upper and  
 70 sole at the stitch-making point than would be possible if the work was pressed against the work-rest entirely by the operator. These pins also engage and hold the work while the awl is being thrust into the upper and sole  
 75 and also while the pusher acts to push the thread into each awl-hole, and the puncturing-feeder therefore resists the penetrating thrust of the awl and pusher. The cam-grooves  $b$  and  $b'$  impart to this puncturing-  
 80 feeder substantially the following motions and in substantially the following succession of time, viz: The puncturing-feeder is moved horizontally backward by the roll  $b^4$  and cam-groove  $b$  along the shaft  $A^{10}$  for the length of  
 85 a stitch while the awl and thread-pusher are out of the stock, and is then depressed by the roll  $b^6$  on the arm  $b^5$  entering the cam-groove  $b'$  to cause the pins to enter the material, and immediately thereafter the feeder will be  
 90 moved horizontally to feed the material for the length of a stitch, and, this done, it will remain in such position and aid in holding the material, as above stated, against the work-rest while the awl  $c^7$  enters and makes a hole  
 95 in the material and also while the awl is retracted and while the thread-pusher  $c^9$  is thrust forward to engage the thread previously measured off and push said thread into the hole just made by the awl, said feeder  
 100 remaining in position and holding the material until just after or about as the said pusher starts to leave the awl-hole, the feeder rising from the material about as the thread-pusher is retracted from the material.  
 105

The framework has a horizontal stud  $A^{12}$ , upon which, in this instance of my invention, is clamped, by a set-screw  $c^x$ , a frame  $C'$ , the construction of said frame being such as to let it rock somewhat about a center coincident with said stud, said frame having an  
 110 arm  $c^4$ , which is provided with a suitable roller or other stud  $c^5$ , adapted to enter the groove  $b^x$  of the cam B. The frame  $C'$  forms a guide for an awl-carrier  $c^6$  having fast to it the awl  
 115  $c^7$ , and for the pusher-carrier  $c^8$ , to which is connected the thread-pusher  $c^9$ . The two carriers are shown (see Figs. 2 and 6) as separated by a partition  $c^{20}$ .

The thread-pusher (best shown in Fig. 17) 120 will be composed preferably of a rod of steel quadrilateral in cross-section and provided at its front end with a substantially semi-circular notch.

The awl-carrier  $c^6$  is provided (see Fig. 2) 125 with a series of teeth adapted to be engaged by segment-teeth  $c^{10}$  of a lever  $c^{12}$ , pivoted upon a stud  $c^{13}$  in the part  $c^4$  of the frame  $C'$ , said lever having a suitable roller or other stud  $c^{14}$ , which enters the cam-groove  $c'$  (see  
 130 Fig. 4) at one side of the cam C, said cam and lever imparting the proper movements to the



said carrier and awl to cause the awl to pierce the material and make a hole for the entrance of the thread-pusher  $c^9$ .

The carrier  $c^8$  for the pusher (see Fig. 2) is provided with a series of rack-teeth 44 adapted to be engaged by the teeth  $c^{15}$  of a lever  $c^{16}$ , having its fulcrum at  $c^{17}$ , (see Fig. 4,) a second arm of the said lever having a suitable roller or other stud  $c^{18}$ , which enters the cam-groove  $c$  (shown by dotted lines in Fig. 4) at the outer side of the cam C.

In this invention it will be seen that the thread-pusher  $c^9$  lies immediately below the awl  $c^7$ , both being in the same vertical plane. In practice the awl will be thrust forward through the work and will then be retracted therefrom, after which the frame  $C'$  will be slightly tipped about its center of motion and in a direction substantially at right angles to the direction of the feed, so as to put the end of the thread-pusher directly opposite the hole made in the material by the awl, so that said pusher when thrust forward will contact with the thread, as described, and push it into the said hole. I aim to retract the awl only just enough to remove its point from the work, and for the best results the point of the awl in practice will not be retracted to a point back of the thread-delivery 3, and consequently the point of the awl cannot get behind the thread issuing from said thread-delivery and engaged by the measuring device. By retracting the point of the awl only to the point stated, (see Fig. 2,) as it is thrust forward to enter the work all liability of piercing and cutting off the threads is obviated.

The framework has a suitable stud  $g$ , upon which is mounted a lever  $g'$ , having a suitable antifriction-roller  $g^2$ , which, by a spring  $g^3$ , (see Fig. 4,) is normally borne against the cam-ledge  $c^2$  of the cam C. This lever  $g'$  has connected to it at its front end, by a set-screw  $g^4$ , the thread-measuring device  $g^5$ , (shown enlarged in Fig. 7,) it having a hooked point adapted to enter the pocket  $d^2$ , referred to and engage the thread  $e^2$  at that side of it which is farthest from the pushing device and at a point between the thread-delivery 3 and the point where the thread is attached to the upper, said measuring device, as it is retracted from the pocket, (see Fig. 8,) engaging said thread and drawing it laterally out from the thread-delivery 3, as indicated in Fig. 18, in which figure it will be supposed that the thread-measuring device has pulled the thread from the tension device and is holding it distended for the action of the pusher. The measuring device having engaged the thread is moved for a distance sufficient to draw from the thread-delivery and tension device enough thread to form the next stitch to be made, and the said measuring device holds the thread distended while the thread-pusher engages it at a distance from the last stitch made in the material equal to the length of one stitch from an-

other, plus half the length of the doubled thread to be left in the stock, such measuring off of the thread completely obviating any rending, drawing, or scraping of the thread across the pusher, and consequently the thread is not at all frayed or weakened by the action of the pusher against it. The measuring device enters the pocket  $d^2$  and engages the thread while the awl and pushing device are retracted.

The feeding device engages the material and starts to feed the same, preferably just an instant ahead of the movement of the measuring device, and the movement of the latter is continued sufficiently to measure off the thread after the feeding device stops. The measuring device having started and drawn the thread across the vertical plane in which the awl works and left the thread just below the point of the retracted awl, the awl will be advanced, and at the same time the frame  $C'$  will be tipped slightly downwardly at its front end to depress the awl upon the thread, this happening while the measuring device is yet moving outwardly or away from the thread-delivery, the awl bending the thread down somewhat and in its continued forward motion entering the material, after which the awl is retracted into its normal or backward position just about as the measuring device completes its outward movement. As the point of the awl is withdrawn from the work, the frame  $C'$  is again tipped, but in an opposite direction, to thus put the awl out of line with the hole just made by it and put the thread-pusher in line with said hole.

The measuring device in its outward position, Fig. 18, holds the thread  $e^2$  straight between the thread-delivery and the hook of the measuring device, keeping said thread stretched across the awl-hole in the stock, so that as the pusher is moved forward it will act on the thread at a distance from the stock, as stated, and will commence to push the same into the awl-hole, the measuring device at the same time being moved toward the thread-delivery to give up to the said pusher the slack thread held by it between the point at which the pusher meets the thread and the stock, the measuring device continuing its movement until it again enters the pocket  $d^2$ , it entering said pocket and retiring from the thread just about as the pusher completes its backward movement or is retracted into its normal position.

The teeth  $g^6$  (see Figs. 4 and 10) at the rear end of lever  $g'$  engage sector-teeth  $g^7$  on and actuate the pull-off lever  $g^8$ , pivoted at  $g^9$  on a part of the framework, the said pull-off having, in this instance of my invention, a roll  $g^{10}$ , which acts on the thread between the guides  $e^5$   $e^6$ , and as the thread-measuring device is approaching the thread-guide preparatory to engaging the thread the said pull-off pulls a sufficient quantity of thread from the wax-pot to afford enough slack thread for the measuring device at its next advance move-



ment, the pawl  $e^8$ , as stated, preventing any retrograde motion of the tension device during the action of the pull-off. As soon as the thread-measuring device engages the thread, the pull-off is moved in the direction to release and let the slack thread just formed go to the thread-tension device. In this way the operator is enabled to measure the tension put on the thread and maintain the tension at exactly the proper point, the tension always being uniform under all conditions of thread.

The machine will be supplied with suitable appliances to keep the wax in the wax-pot and those surfaces with which the wax-thread is liable to contact during the operation of sewing suitably warm.

The part  $D'$ , at one side the pitch-guide  $f$ , may, and preferably will, be provided with a lip  $e^{10}$ , having a thin edge turned backwardly, (see Figs. 6 and 8,) said lip acting in the capacity of a guard or shield for the thread-measuring device, so that the measuring device, as it is being moved toward the pocket  $d^2$ , will not contact with the upper of the shoe.

In this my invention it will be seen (see diagram Fig. 18) that the thread-measuring device engages one side of the thread and draws upon the same between the material at the last stitch and the thread-delivery, and the said measuring device, having drawn from the tension device a sufficient quantity of thread for the next stitch, the thread-pusher contacts with the measured thread between the measuring device and the thread-delivery, and as the thread-pusher comes forward to push the measured thread into the hole made by the awl the thread-measuring device is moved toward and across the path of movement of the pusher, so that the said thread-measuring device gradually gives up the measured thread to the pusher, the thread-measuring device supporting the thread under the action of the pusher until the pusher has started the thread into the hole to be filled by it.

Should the awl punch a hole in the material at the same time that the pusher entered another awl-hole in the material, it would be difficult to sew a curved seam or about the toes of boots or shoes which are pointed or curved, and this difficulty would, it is obvious, be enhanced the greater the distance of the awl from the pusher in the line of the seam, but by moving the awl and pusher transversely to the line of feed it is possible to easily turn any curve or corner.

While I prefer to employ a machine constructed and to operate substantially as described, yet my invention is not restricted to the particular construction or operation shown, for the same may be changed without departing from the spirit and scope of my invention.

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

1. In an organized sewing machine, the fol-

lowing instrumentalities, viz:—a work-rest to hold the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; and means to actuate said pusher and thread distending and pulling-off device, to operate, substantially as described.

2. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; means to actuate said pusher and thread distending and pulling-off device, and a pitch gage, to operate, substantially as described.

3. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; means to actuate said pusher and thread distending and pulling-off device, and an awl to make a hole to be entered by said pusher, substantially as described.

4. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the same side of the work-rest said pusher to enter the work from the side acted upon by the work rest; means to actuate said pusher and thread distending and pulling-off device, an awl to make a hole to be entered by said pusher, and a pitch gage, to operate substantially as described.

5. In a sole sewing machine, a thread delivery; a stationary work-rest having a narrow edge or corner located near said thread-delivery and against which the edge of the sole rests; and a thread measuring device to engage said thread and pull out a sufficient quantity for the next stitch; combined with a pusher movable adjacent to said work-rest and located



at the same side of the work, to engage said measured and distended thread and push it into a sole from its edge, substantially as described.

5 6. In a sole sewing machine, a thread delivery; a stationary work-rest having a narrow edge or corner located near said thread delivery; and a thread-measuring device to engage  
10 for the next stitch; combined with a pusher to engage said measured thread and push it into a sole from its edge; and a guard interposed between the said measuring device and the upper of the shoe being stitched, substantially as described.

15 7. In an organized sewing machine, the following instrumentalities, viz:—a work-rest to support the upper against the edge of the sole; a thread delivery; a device to pull off and  
20 hold distended at the side of the pusher adjacent the last stitch made a quantity of thread for the next stitch; a thread pusher to engage said distended thread, said device and the thread pusher being located at the  
25 same side of the work-rest said pusher to enter the work at the side acted upon by the work rest; and means to actuate said pusher and thread distending and pulling-off device, and a feeding device to automatically engage the  
30 work and move it along said work-rest, substantially as described.

8. In an organized sewing machine, the following instrumentalities, viz:—a narrow work-rest to support the upper at or near the edge  
35 of the sole, along which rest the work may be slid between successive stitches; a thread delivery; a thread measuring device to pull out and hold distended a quantity of thread for the next stitch, a thread pusher to engage  
40 said measured loop of thread while the said device holds the thread distended between it and the thread delivery; means to move said pusher and thread measuring device, and devices to intermittently engage and aid in holding  
45 the work against said work-rest while the said pusher is pushing a loop of thread through the upper and into the sole from its edge toward the longitudinal center of the sole, substantially as described.

50 9. A sole sewing machine containing the following instrumentalities, viz:—a narrow work-rest; a thread delivery in close proximity thereto; a thread measuring device; an awl carrier or bar, having an awl; a pusher carrier or bar having a pusher; devices to actuate said carriers or bars independently one of  
55 the other in said frame; and devices to move said carriers substantially at right angles to the line of movement of the work over said  
60 work-rest whereby the pusher may be made to enter a hole from which the awl has just retired and to fill said hole with thread, substantially as described.

10. In a sole sewing machine, a narrow  
65 work-rest against which the work may be pressed; a thread guide in said work-rest hav-

ing a thread delivery opening and pocket, both located just back of the acting edge of said work-rest; combined with a thread measuring device; and means to move it to engage  
70 and draw the thread for a measured length from said delivery, substantially as described.

11. In a sole sewing machine, a thread delivery; a stationary work rest having a narrow edge or corner and located near said thread  
75 delivery; and a thread measuring device to engage said thread; combined with a guard interposed between the said measuring device and the upper of the shoe being stitched; substantially as described.

12. In a sole sewing machine, a narrow work rest having a corner against which the upper may be pressed to keep it firmly in contact with a portion of the inner sole near its edge; and a piercing awl to enter the edge of the  
85 sole; combined with an adjustable throat piece to act as a guide or steadying device for the awl, substantially as described.

13. In a sole sewing machine, a work rest having a narrow edge to aid in keeping the  
90 upper and sole in contact at the stitch making point; a pitch gage; an awl; a thread pusher; a thread measuring device; and an independent puncturing feeder to pierce the sole from the side opposite the awl and pusher, near the  
95 path of movement of the said awl and pusher substantially as described.

14. In a sole sewing machine, a thread guide; a work-rest; and a rocking frame having its pivot substantially parallel to the edge of the  
100 work rest; combined with an awl-carrier and a pusher-carrier mounted in said frame; an awl attached to the awl-carrier; a thread pusher attached to the pusher-carrier; and with means to tip the said frame substantially at right  
105 angles to the length of the seam to be made, whereby the thread-pusher may be made to enter the hole made by the awl, to operate substantially as described.

15. In a sewing machine, a rocking frame,  
110 an awl carrier mounted therein and provided with an awl; a pusher carrier mounted therein and provided with a thread pusher; a thread delivery; a narrow work rest; and a pitch gage; combined with a thread measuring device to take the thread at the thread guide, and measure off the same for the next stitch to be made; and with means to actuate said frame and to reciprocate said carriers independently whereby the awl, while the work is  
120 at rest, is made to penetrate the material, and is then withdrawn therefrom and is carried out of line with said hole by a movement of said frame, the pusher in the meantime being put opposite the hole made by the awl and in  
125 line with the thread held stretched between the thread guide and the thread measuring device, and whereby the pusher is then reciprocated to push the measured thread into the hole made by the awl and retire from said  
130 hole and leave said thread therein doubled, substantially as described.



16. In a sole sewing machine, a rocking  
 frame, an awl carrier mounted therein and  
 provided with an awl; a pusher carrier mount-  
 ed therein and provided with a thread pusher;  
 5 a thread delivery; a narrow work rest; and a  
 pitch gage; combined with a thread measur-  
 ing device to take the thread at the thread  
 guide, and measure off the same for the next  
 stitch to be made; and means to actuate said  
 10 frame and to reciprocate said bars independ-  
 ently, whereby the awl, while the work is at  
 rest; is made to penetrate the material, is  
 then withdrawn therefrom, and the pusher by  
 a movement of the frame is put opposite the  
 15 hole made by the awl and in line with the  
 thread stretched between the thread guide  
 and the thread measuring device, the pusher  
 bar being then reciprocated to put the meas-  
 ured thread into the hole made by the awl  
 20 and being then retracted from said hole leav-  
 ing said thread doubled therein; and with a  
 puncturing feeder to engage and hold the ma-  
 terial during the time that the latter is being  
 punctured by the awl and while the pusher  
 25 acts to fill the awl hole with thread, substan-  
 tially as described.

17. In a sole sewing machine, a work-rest,  
 against which the work is held while being  
 stitched, a device having two penetrating  
 30 points to enter the sole to be stitched, com-  
 bined with stitch-forming devices and actuat-  
 ing means therefor, the said points entering  
 the sole at each side the stitch-making point  
 and holding said sole firmly while the stitch

is being made therein, substantially as de- 35  
 scribed.

18. In a sole sewing machine, a narrow  
 work-rest; and a puncturing feeder having  
 two work-penetrating points to enter the sole  
 to be stitched, combined with a thread-pusher; 40  
 and actuating devices for said pusher and  
 feeder, whereby the points of the feeder are  
 made to enter the sole at each side the stitch  
 being made in the sole, and to hold said sole  
 while the pusher is entering it, as and for the 45  
 purposes set forth.

19. A sole sewing machine containing the  
 following instrumentalities viz:—a work-sup-  
 port; a feeding device adapted to move the  
 work in the direction of the length of the 50  
 seam; a vibrating frame having its pivot sub-  
 stantially parallel to the direction of feed of  
 the work; a pusher carrier having a thread  
 pusher; an awl carrier having an awl, said  
 carriers being mounted in the same vertical 55  
 plane; and devices to reciprocate said car-  
 riers, actuate said feeding device, and tip said  
 frame transversely to the direction of the  
 movement of the feeding device when feed-  
 ing the work over the work-support, substan- 60  
 tially as described.

In testimony whereof I have signed my  
 name to this specification in the presence of  
 two subscribing witnesses.

LOUIS GODDU.

Witnesses:

FREDERICK L. EMERY,  
 HADLEY P. FAIRFIELD.