

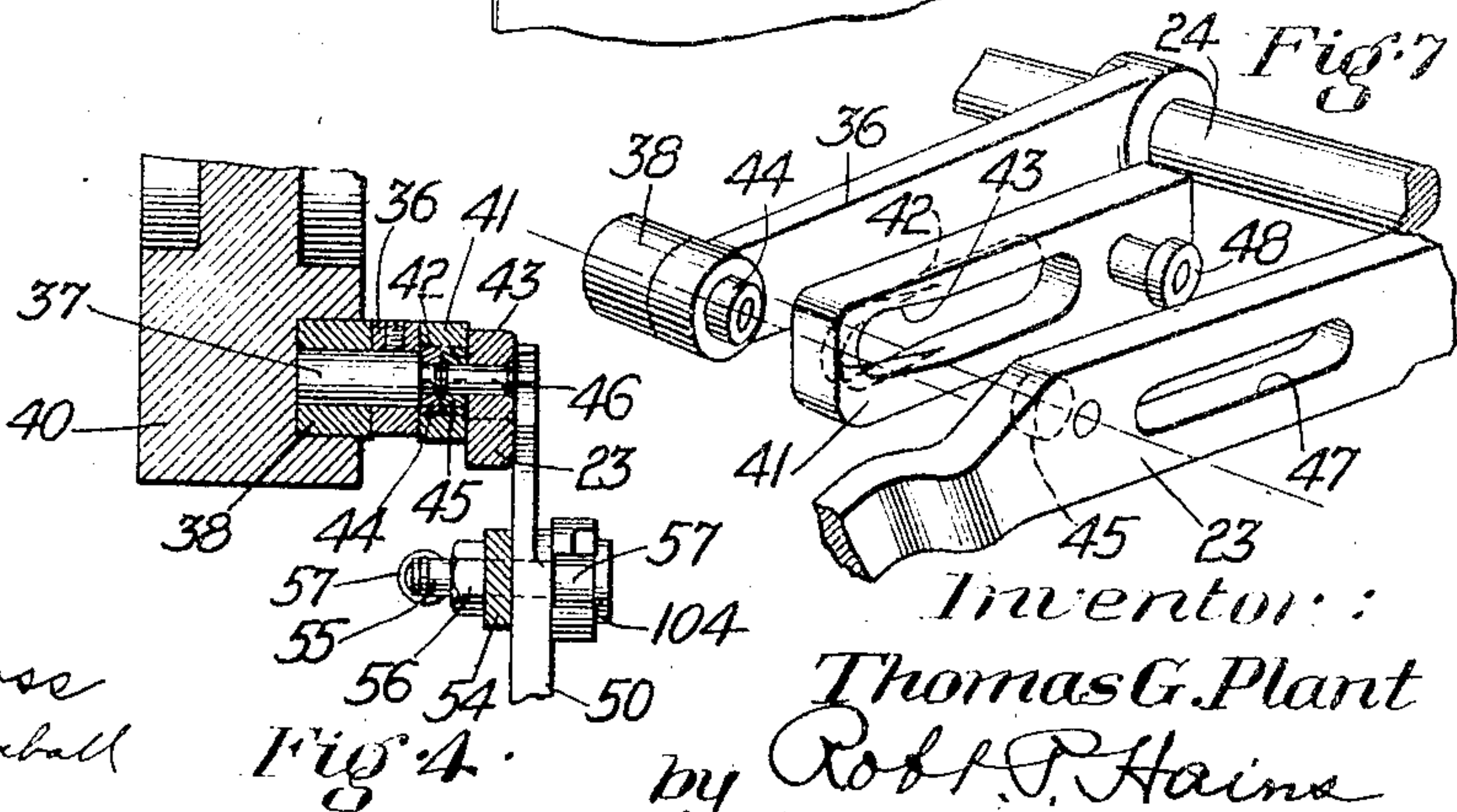
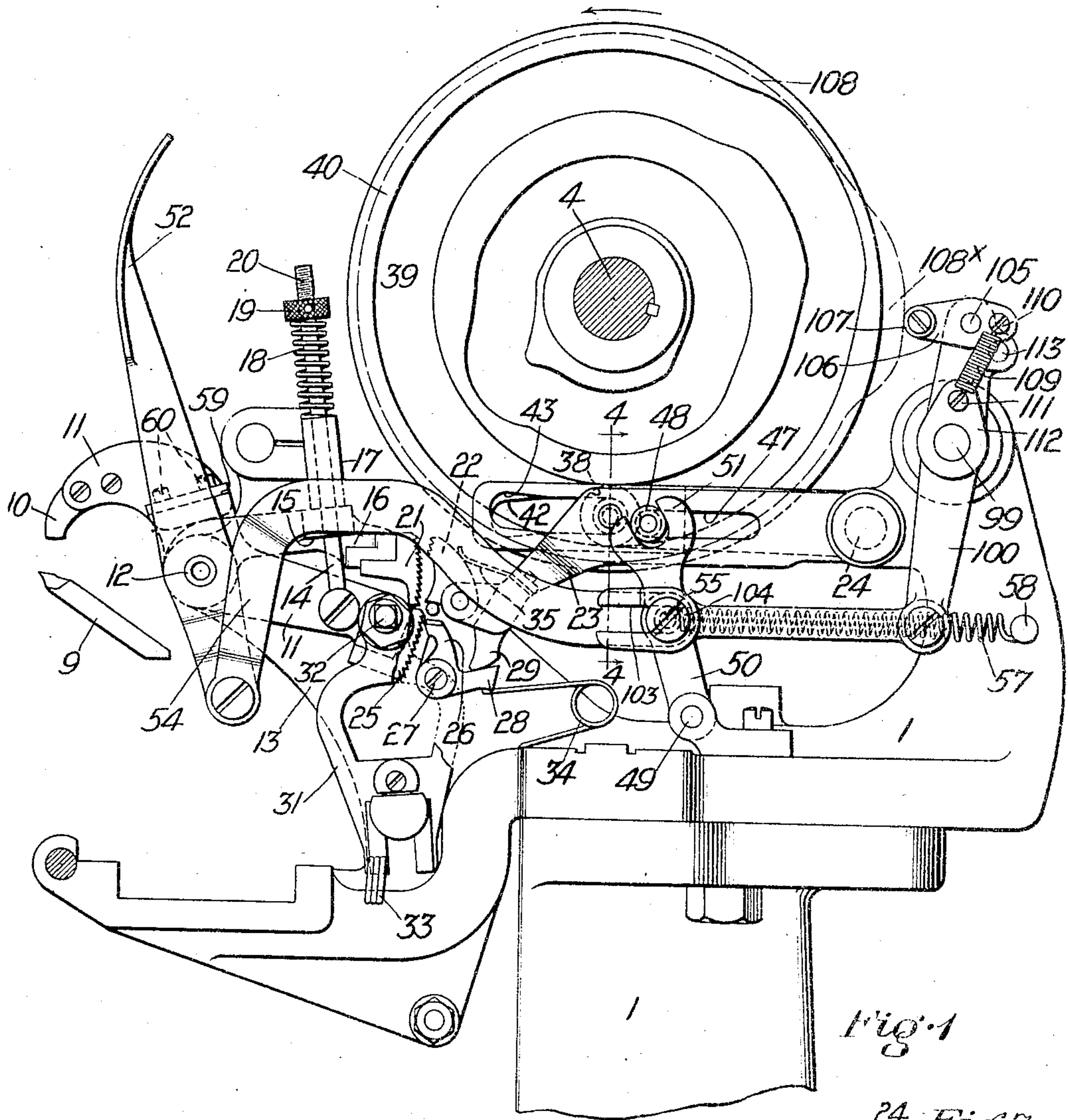
T. G. PLANT.  
SOLE SEWING MACHINE.

APPLICATION FILED FEB. 4, 1908. RENEWED APR. 14, 1909.

940,054.

Patented Nov. 16, 1909.

4 SHEETS—SHEET 1.



Witnesses:  
Amelia M. Ross  
Marion F. Kimball

Inventor:  
Thomas G. Plant  
by Robt. P. Hains  
Att'y

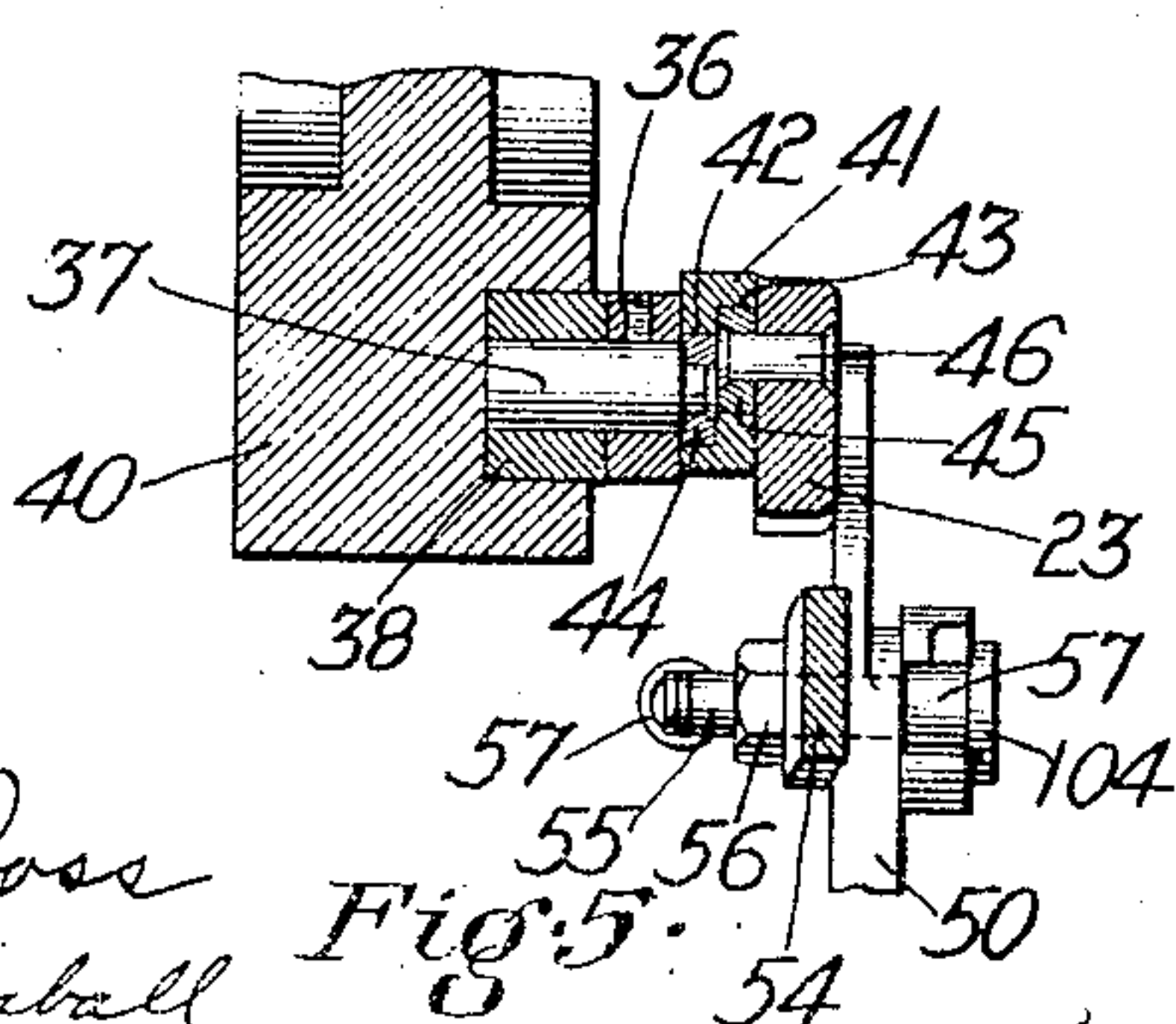
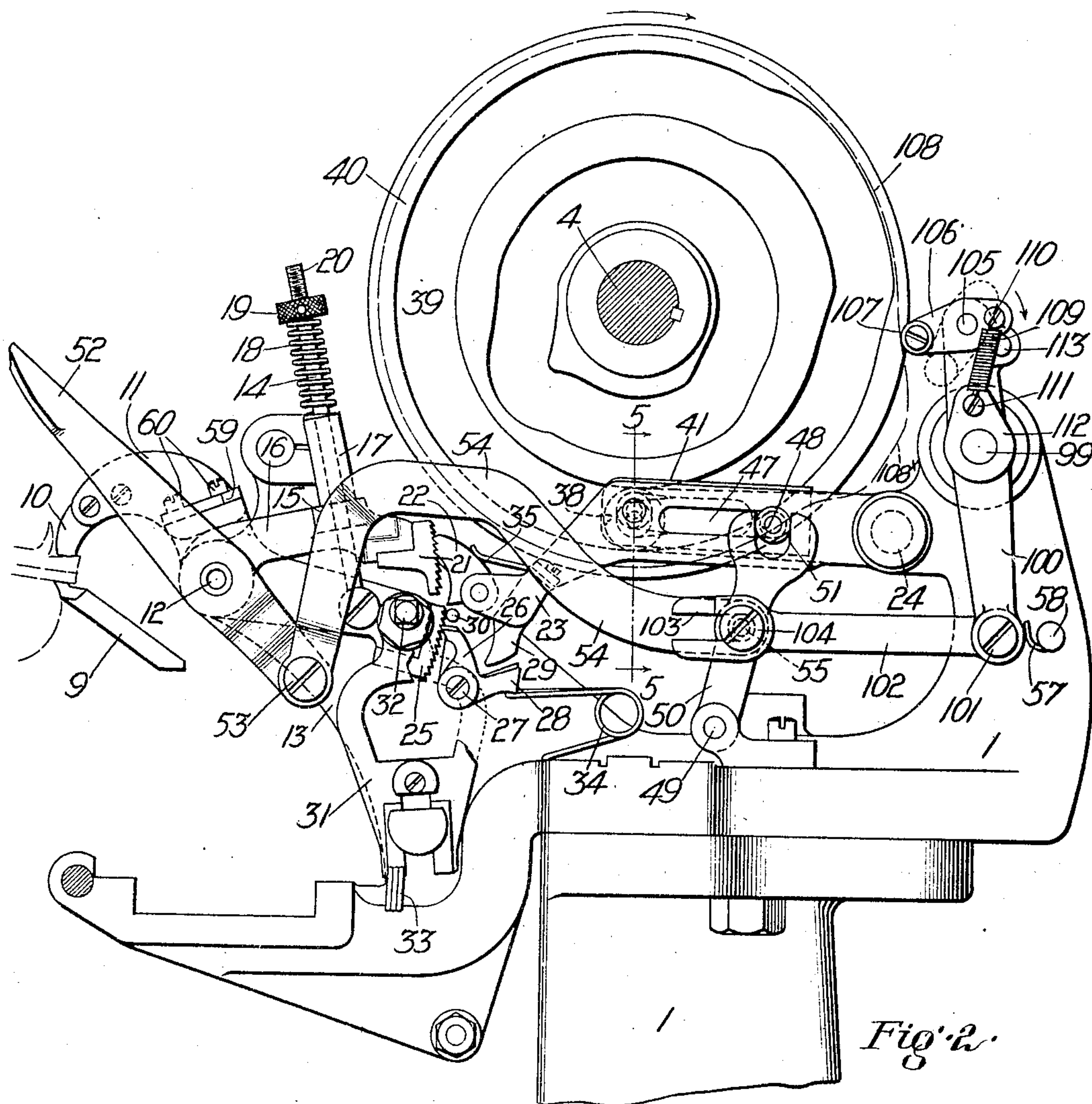
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4 SHEETS—SHEET 2.



Witnesses:

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Fig. 5.

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4 SHEETS—SHEET 4.

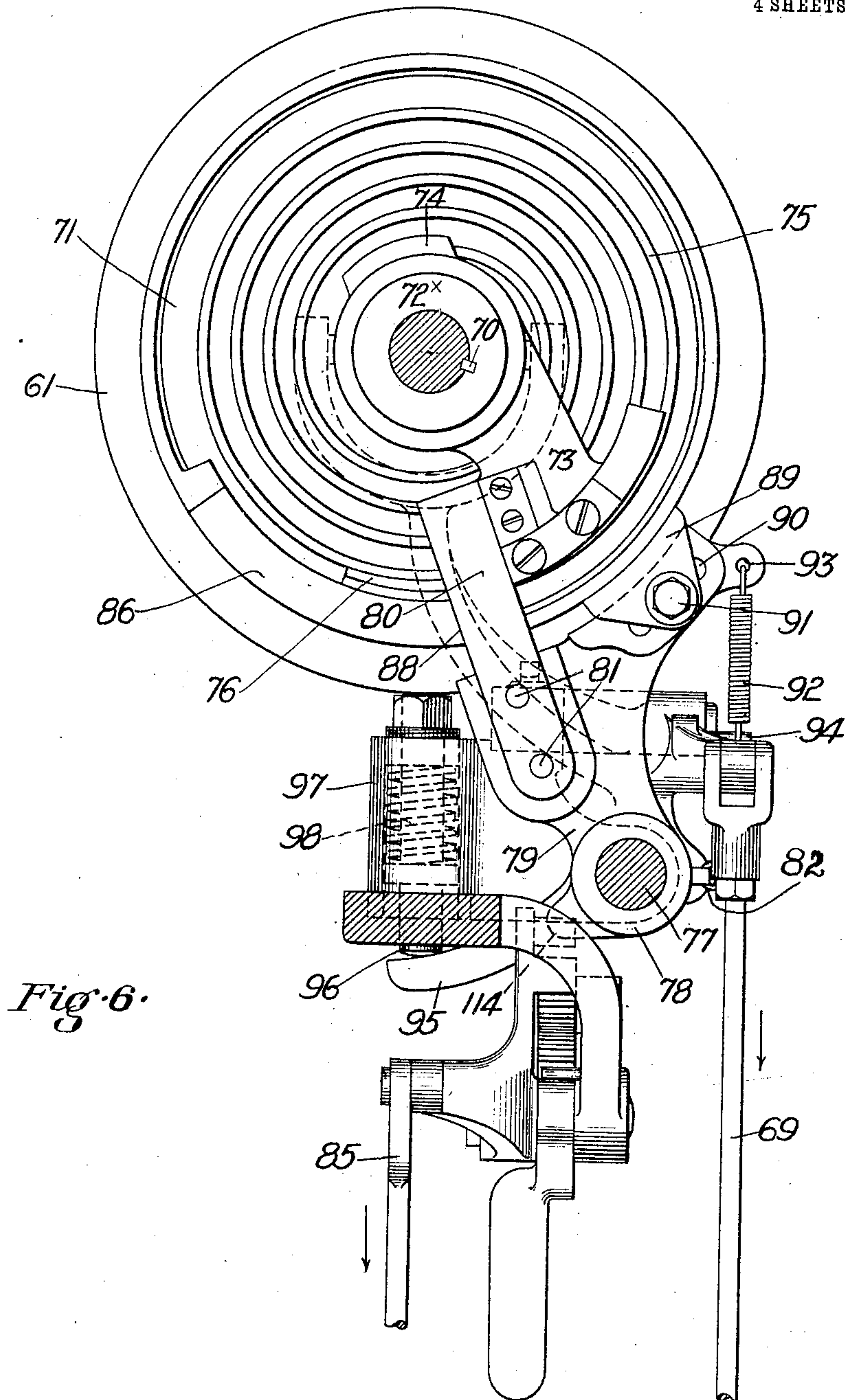


Fig. 6.

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# UNITED STATES PATENT OFFICE.

THOMAS G. PLANT, OF BOSTON, MASSACHUSETTS.

## SOLE-SEWING MACHINE.

940,054.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed February 4, 1908, Serial No. 414,161. Renewed April 14, 1909. Serial No. 489,893.

*To all whom it may concern:*

Be it known that I, THOMAS G. PLANT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Sole-Sewing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

The invention to be hereinafter described relates to sole sewing machines of the general type described in United States Letters Patent No. 473,870, dated April 26, 1892. In machines of this type, the work has been supported upon a stationary table and held in place by a movable presser foot capable of being locked in work clamping position, at which time, obviously, the work could not be adjusted or its position changed. It was necessary, however, that the work be fed and also removed from the machine, therefore, provision was made in said patented machine to release the clamping action of the presser foot when the awl was in the work during the feeding movement and again at the completion of each stitch formation. When the presser foot was released at the completion of each stitch formation, however, neither the awl nor the needle was in the material, so that machine control of the work was lost, and it was liable to be moved by the operative with obviously objectionable results. Attempts have been made to retain the increased or clamping pressure of the presser foot upon the work, and the consequent machine control thereof, at all times, except during the intervals of feed, and means have been provided under the control of the operative for unlocking the presser foot at desired times. In thus unlocking the presser foot between feed movements by these prior methods, however, it has been necessary to retain in action the devices for giving the increased pressure. In other words, if the operative found it desirable to adjust or manipulate the work, he was called upon to unlock the presser foot while the increased pressure was maintained, and then lift the presser foot against the force of the devices imparting the increased pressure.

With these considerations in view, the present invention aims to do away with the necessity of thus manipulating the presser

foot while the increased pressure is maintained, thus avoiding stress upon the machine and operative; to provide means for relieving the increased pressure prior to unlocking the presser foot; to provide for restoring such increased pressure; and to provide for stopping the machine in predetermined position with the presser foot raised. These characteristics of the present invention and other objects thereof will best be made clear by the following description and accompanying drawing of one form or embodiment of the invention and its identifying features.

In the drawings:— Figure 1 is an end elevation of a sole sewing machine embodying the present invention, only sufficient of the sewing devices being illustrated to make clear, to one skilled in the art, the connection and relation of the invention thereto, the presser foot being shown in raised position; Fig. 2 is a view similar to Fig. 1, with the presser foot in lowered and increased pressure position; Fig. 3 is a front elevation of the machine viewed from the left, Fig. 1, parts of the sewing instrumentalities being omitted for clearness of illustration, and a part of the frame being in section; Fig. 4 is a sectional detail on the line 4—4, Fig. 1; Fig. 5 is a sectional detail on the line 5—5, Fig. 2; Fig. 6 is a section on the broken line 6—6, Fig. 3, showing a form of reversing and stopping device; and Fig. 7 is a detached detail of the slide and adjacent parts.

The machine frame 1 may be of appropriate character to provide support for the working parts. Journaled in bearings 2, 2, Fig. 3, is the main shaft 4 having thereon the several cams 5, 40, 7 and 8 for imparting motion to the machine elements.

Referring to Figs. 1 and 2, the work table 9 is appropriately supported from the frame work of the machine, and may be as indicated in Patent No. 473,870 to which reference has been made. The presser foot 10 is carried by an elbow shaped lever 11 loosely mounted upon a stud or like appropriate support 12 projecting from a bracket 13 formed as part of or secured to the machine framing. At its rear end the lever 11 has connected to it a link 14, which extends loosely through a lug 15 on the arm 16 also mounted loosely upon the support 12 or a suitable boss upon the lever 11, and above said lug 15 the link 14 is surrounded



by a washer 17, which is acted upon by a spring 18, adjustable as to its force by a nut 19 screwed upon the end 20 of said link 14.

The rear end of the arm 16 is provided with ratchet teeth or a ratchet dog 21 adapted to be engaged at times by one or more pawls 22, said pawls being carried by a lever 23 fulcrumed on the machine frame by means of a pin or stud 24. The rear end of the lever 11 is likewise provided with ratchet teeth or a ratchet dog 25, adapted to be engaged by pawls 26 mounted at 27 upon the machine frame, said pawls having rearward extensions 28 adapted to be engaged by the widened end 29 of the lever 23 when said lever is depressed to trip the pawls. A stud 30 projecting from the machine frame serves to trip the pawls 22 when the lever 23 is sufficiently depressed.

To the lever 11 at 32 is connected the vertically movable frame 31 normally under the lifting action of a suitable spring 33 tending to maintain the presser foot in light engagement with the work. The pawls 22 are engaged by a spring 35 carried by the lever 23 and said spring acts to normally turn the pawls into engagement with the ratchet teeth or ratchet dog 21. A spring 34 acting on the pawls 26 normally turns them into locking engagement with the ratchet teeth or ratchet dog 25.

The parts so far described, with the exception of possible details as to form and the mounting of the spring 34, are and may be substantially as pointed out in Patent No. 473,870.

Mounted loosely upon the stud 24 is an arm 36, Figs. 1 to 4, said arm having secured thereto a pin 37 carrying a roll 38 traveling in the cam path 39, Figs. 1 and 2, of a cam 40, secured to the main shaft 4. Disposed between the arm 36, and the substantially horizontal portion of the lever 23, is a slide 41 having the cam grooves or slots 42 and 43. These cam slots, best shown in Figs. 4, 5 and 7, extend longitudinally of the slide 41 and for part of their length are substantially straight or devoid of relative divergence, but near the end of the slide, the left end viewing Fig. 7, their relative divergence is greatest. The pin 37, on the side of the arm 36 adjacent the slide 41, carries a roll 44, Figs. 4 and 5, which travels in the groove or slot 42 of the slide 41; and the lever 23, on the side adjacent the slide 41, carries a roll 45 mounted on a pin or stud 46, said roll 45 traveling in the other groove or slot 43 of the slide 41. From this construction it will be apparent that the lever 23 derives motion from the cam groove 39 only through the arm 36 and interposed slide 41, and that movement of said slide 41 longitudinally will turn the lever 23 upon its fulcrum by virtue of the relative divergence of the grooves or slots 42, 43. In

the arrangement of grooves or slots illustrated, their relation is such that upon moving the slide 41 forward, or from the position shown in Fig. 2 to that shown in Fig. 1, the lever arm 23 will be turned in a downward direction upon its fulcrum pin or stud 24; and by reverse movement of the slide said lever arm 23 will be raised. This directional movement is arbitrary, however, as it will be at once obvious that changes will suggest themselves in carrying into practical form this feature of the invention.

The lever 23 is provided with a slot 47, Figs. 1 and 2, through which projects a pin 48 secured to the slide 41, said pin 48 preferably carrying a roller, as indicated. Pivoted to the machine frame at 49 is a shifting arm 50, the upper portion of which engages the pin 48 or its roller, preferably by means of the bifurcated end portion 51, whereby movement of the shifting arm 50 upon its pivot 49 will cause the slide 41 to move longitudinally between the lever 23 and the operating arm 36.

Mounted upon the stud or support 12 is a hand lever 52 having jointed to its lower portion, at 53, the link 54, which extends rearward to and is connected with the shifting arm 50 by a pin 55, Figs. 2, 3, 4 and 5. The pin 55 projects beyond the nut 56, Figs. 3 and 4, and has secured to it one end of a spring 57, the other end being connected to a pin 58 secured to the main frame, said spring 57, Fig. 1, thus acting to draw the arm 50 toward the rear, as will be apparent.

With the parts disposed as in Fig. 1, it will be apparent to those skilled in the art, that upon rotation of the shaft 4, the riser of the cam groove 39 acting upon the roll 38 of the arm 36 will cause the lever 23 to be depressed, thereby unlocking the pawls 22 and 26 from the ratchet teeth or dogs 21 and 25 respectively, at which time the presser foot is held in work engagement by the light spring 33 alone. The parts are so formed and timed with reference to the operation of the awl, that the above unlocked condition occurs when the awl has entered the material and continues during the feed movement, and then, preferably just prior to the withdrawal of the awl, the action of the cam groove 39 raises the lever 23 to bring the presser foot into position of increased pressure, where it may remain until after the awl has again penetrated the work. Thus, except when the awl is in the material or during the intervals of feed, the presser foot is in position of increased pressure, due to the action of the pawls, spring 18 and connections, as will be readily understood by those familiar with this class of machines.

To release the work during intervals between feed movements, to put in new work, or to adjust the work for any purpose, as, for instance, when a thread breaks and a



fresh start is to be made, it was heretofore necessary in this type of machine to unlock the presser foot from its lower holding pawls while the full increased pressure due to the spring 18 was acting, and to then raise and hold the presser foot against this pressure with one hand, while, with the other, the shoe might be manipulated. In the present invention this condition is obviated, it being only necessary to push the handle 52 from the position shown in Fig. 2 to that shown in Fig. 1, the result being that the link 54 turns the arm 50 upon its fulcrum pin 49, thus moving the slide 41 forward into the position indicated in Fig. 1, which has the effect of lowering the lever 23, as described, thus relieving the increased pressure of the presser foot in the first instance by lowering the pawls 22, while still in engagement with ratchet teeth 21, the distance between the lower part of said pawls and the pin 30, after which the pawls 22 are tripped by the pin 30, and the pawls 26 are tripped to unlock the presser foot, which is now entirely free with the exception of the light spring action due to spring 33. Thus it will be clear that the presser foot can be released at any time to permit adjustment of work and when so released or unlocked that the increased pressure is not maintained.

The work having been adjusted, it is desirable to reapply the increased pressure, and lock the presser foot. This is done by the present invention by movement of the handle 52 from its position, Fig. 1, to that of Fig. 2, such movement of the handle causing a reverse action of the slide 41, so that as the diverging or cam portions of the slots or grooves in the slide 41 act upon their associated rolls on the arm 36 and lever 23 respectively, the latter is raised, thus allowing the pawls 22 and 26 to engage their respective ratchet dogs, and then, by further upward movement of lever 23, to lift the end of the arm 16, thereby applying the increased pressure, the pawls 26, at such time, again acting to lock the presser foot in such position of increased pressure.

When the handle 52 is moved to release the presser foot, it is desirable that it may be raised clear of the work at times, and as one means of accomplishing this result, there is, in the present invention, a stop or shoulder 59, Figs. 1, 2 and 3, formed by a plate secured by screws 60, or otherwise, to the presser foot lever 11, the construction being such that upon rearward movement of the handle 52, said handle, after releasing the presser foot both from the action of the increased pressure devices and its locking pawls, will contact with the stop or shoulder 59 and raise the presser foot to its full raised position, Fig. 1, such action being effected against the light spring 33.

In order that the presser foot may be au-

tomatically returned to its position of increased pressure and locked in such position, the tension of the spring 57, acting to turn the shifting arm 50, may be such as to move the slide 41 rearward when the handle 52 is released, with the result that the lever 23 will be raised, the pawls be thrown into engagement with their ratchet dogs, the increased pressure be restored and the presser foot be locked in its position of increased pressure.

When it becomes desirable to remove the work at the end of a sewing operation and to place a new piece of work in the machine, obviously, the awl and needle must be out of the work and the presser foot must be raised, in other words, the machine should be stopped or brought to rest with these parts in such predetermined position. To insure that the presser foot shall be released from its position of increased pressure and unlocked, and that it be raised into substantially the position indicated in Fig. 1, when the machine is finally brought to rest, the present invention provides means, operative as the machine approaches its final stopping position, to automatically place the presser foot in the desired relation with respect to the work. As one means of securing this end, provision is made for reversing the action of the machine parts when a sewing operation is completed, such reversal being utilized to move the slide 41 and depress the lever 23, as will now be described.

Referring to Figs. 3 and 6, the driving shaft 4 has loosely mounted thereon a driving member 61 of a suitable clutch, said member being movable longitudinally of the shaft 4 by means of a bell crank lever 62, pivotally mounted on the machine frame 63, Fig. 3, one arm of which is provided with a yoke 64 engaging a ring 65 loosely mounted on the hub 66 of the clutch member 61; the other arm 67 of said lever being connected at 68 to a treadle rod 69. Obviously, any well known means may be employed to shift the clutch member 61.

Fixed to the shaft 4, as by the key 70, is the fast clutch member 71, Figs. 3 and 6, suitable friction material 72 being interposed between the members 61 and 71, so that the latter may be appropriately driven from the former when the two are brought together, as will be readily understood. Loosely mounted on the hub 72\*, Fig. 6, of the clutch member 71, is a stop arm 73 to which, at 74, is secured one end of a coiled spring 75, the other end of said spring being secured to the clutch member 71, at 76. From this it will be clear with the machine in operation that should the clutch member 61 be disengaged from the member 71, and the stop arm 73 be stopped from rotation with member 71, the latter will be moved for some distance by the momentum of the



machine elements, thus winding up the spring 75, and that the tension of the wound spring will first bring the machine to a stop without shock and then reverse the same until finally arrested, as will now be explained.

A stud or pin 77, Fig. 6, secured to the machine frame extends parallel to the driving shaft 4, and has mounted thereon a sleeve 78 free to turn and slide thereon. Projecting from the sleeve 78 is an arm 79, carrying a stop finger 80, appropriately secured there by suitable bolts 81. The sleeve 78 and stop finger 80 are normally influenced by a spring 82, see dotted lines Fig. 3, tending to move them to the left, Fig. 3, or toward the face of clutch member 71, and are movable in the opposite direction by means of a bell crank lever 83, pivoted at 84 to the machine frame, and connected by a treadle rod 85 to a suitable treadle, not necessary to illustrate, but preferably the same as that to which the rod 69 is connected.

The stop arm 73 projects a short distance beyond the face of the clutch member 71, or as shown in Fig. 3, a little to the right thereof, so that if the stop finger is permitted to be moved by its spring 82 to the left, Fig. 3, it will be in position to be engaged by the advancing edge of the stop arm 73, and thus arrest its further movement. This position of the stop finger, however, can only be assumed when the clutch member 61 is disengaged from the other clutch member 71, since, as stated, the rods 69 and 85 are connected to or operated by the same treadle.

On the face of the clutch member 71 is a cam or stop 86, Figs. 3 and 6. This cam stop 86, as shown in Fig. 3, does not extend from the face of the clutch member 71 as far as does the stop arm 73, so that should the treadle be released and the stop finger 80 be moved by its spring 82 toward the face of the clutch member 71, the said stop finger will ride upon the face of the said clutch member and rise over the inclined surface 87 of the cam stop 86 and, upon being met by the stop arm 73, will arrest said stop arm as hereinbefore pointed out. The spring 75 having been wound or tensioned by the continued movement of the clutch member 71 after the stop arm 73 has been thus arrested, will cause a reverse motion of the clutch member 71 and the machine parts until the abrupt face 88 of the cam stop 86 meets the edge of the stop finger opposite that engaged by the stop arm 73, the said stop finger having moved to the left under the action of its spring after the passage thereunder of the cam stop 86. The machine parts will, therefore, be brought to rest in a predetermined position, as will be well understood by those skilled in the art.

In order to facilitate the stopping of the

clutch member 71 without shock, the arm 79, Fig. 6, has secured thereto a brake-shoe 89, said brake-shoe being preferably adjustable on said arm as by the slot 90 and bolt 91. Thus, as the stop arm 73 strikes the stop finger 80, it will turn the sleeve 78 about the stud 77 and apply the brake, the brake being normally held from engagement with the clutch member 71 by means of a spring 92, Fig. 6, one end of which is secured to a projection 93 on the arm 79, and the other end to a pin 94 connected to the machine frame.

When the clutch member 71 has been brought to rest and then reversed by the spring 75, the end 88 of the cam stop 86 will strike the stop finger 80 in the reverse direction, and to cushion this shock, the sleeve 78 has projecting therefrom a toe 95 which bears upon a stop pin 96 contained in a seat 97 and normally held in its position by means of a spring 98.

Mounted on the machine frame, Figs. 1 and 2, is a stud shaft 99 carrying an arm 100 loosely mounted thereon, the lower end of said arm being connected at 101 to a link 102 having a bifurcated end 103 engaging the shifting arm 50 preferably by means of an extension of the pin 57, as shown in Figs. 4 and 5 said pin having a head 104 for maintaining the link 102 in proper engagement therewith.

Mounted upon a pin 105 carried at the upper end of the lever or arm 100 is a dog 106 having at its end a roll 107 bearing upon the periphery of a cam 108 carried by the main shaft 4. This dog 106 is normally acted upon by a spring 109, one end of which is connected to said dog at 110 and the other to a pin 111 carried by a collar 112 on the stud shaft 99, the tendency of said spring being to normally turn the dog from the dotted line position, Fig. 2, into its full line position, a stop 113 being provided to limit the run of the dog in the direction of the arrow, Fig. 2.

From the construction described, it will be clearly understood by those skilled in the art that during the normal operation of the machine, the roll 107 on the dog 106 will ride idly upon its cam 108, the spring 109 yielding as the riser of its cam passes under the roller 107. On the reverse movement of the cam 108, however, the riser 108\*, see dotted lines, Figs. 1 and 2, will act upon the dog 106 in the reverse direction, and as said dog is now held from turning in the reverse direction by means of the pin 113, the riser 108\* will move the lever 100 about its stud shaft 99 as the riser of the cam 108 passes from the position indicated in Fig. 2 to that indicated in Fig. 1, the result being that the link 102 acting upon the shifting arm 50 will cause the slide 41 to be moved forward and to the left from the position shown in Fig. 2 to that shown in Fig. 1, with the result



that the increased pressure upon the presser foot will first be released, then, the presser foot will be unlocked, and by further movement of the slide and shifting arm 50, the link 54 will turn the handle 52 about its fulcrum 12, causing it to contact with the stop 59 and thereby raise the presser foot entirely from the work. The operation of the machine will be clear to those skilled in the art without further elucidation, it being noted that when the treadle is depressed, it will act through the treadle rods 69 and 85 to cause the clutch member 61 to be thrown into engagement with the clutch member 71 and simultaneously therewith the bell crank 83, through its pin connection 114 with the sleeve 78, will cause the stop finger 80 to be withdrawn from its stopping position. At each rotation of the main shaft, the lever 23 will be operated to release the presser foot from its position of increased pressure during the intervals of feed, and should it be desirable at any time to adjust the work upon the table, or if for any reason it becomes desirable to raise the presser foot, the handle 52 can be moved by the attendant from the position shown in Fig. 2 to that shown in Fig. 1, the result of which is that the increased pressure upon the presser foot will first be relieved altogether, and, then, the presser foot will be unlocked,—further movement of the handle 52 causing the presser foot to be lifted clear of the work. On releasing the handle 52, the presser foot will be again restored to its position of increased pressure and locked in such position, preferably by means of the spring 57, as hereinbefore explained. On the completion of a sewing operation, the attendant will release the treadle with the result that the clutch members will be disengaged, and the stop finger 80 will move to the left, Fig. 3, to be engaged by the stop arm 73, the momentum of the machine carrying the clutch member 71 a part of the revolution until the spring 75 stops and reverses the clutch member and the machine parts, bringing them to rest in a predetermined position, as before noted. This reverse motion of the machine parts and the driving shaft 4 causes the riser 108\* to act upon the dog 106, and, through the connecting devices, as already described, move the slide 41, thereby relieving the presser foot from increased pressure, unlocking it, and raising it to a position free of the work.

While the present invention has been described in detail as embodied in the mechanical structures herein selected for illustrative purposes, it is to be understood that the invention and its identifying characteristics are not circumscribed by these details, which may be varied. It is believed to be broadly new in a machine of this general character to provide means for giving to a presser foot

a position of increased pressure and locking the same, and to provide means for first relieving the presser foot of its increased pressure and then unlocking it so that it may be moved at any time free of the work, whether by the operative or by the action of the mechanical parts themselves.

#### Claims:

1. In a sole-sewing machine, the combination with a work support, of a movable presser-foot, means to force said presser-foot against the work on the work support with a normally light pressure, means to increase said pressure at intervals and to lock said presser-foot when the pressure has been increased, and means under control of the operative to successively release the presser-foot from increased pressure and to unlock the presser-foot.

2. In a sole-sewing machine, the combination of a work support, a movable presser-foot, means to force said presser-foot against the work on the work support with a normally light pressure, means to increase said pressure at intervals and to lock said presser-foot when the pressure has been increased, means under control of the operator to release the presser-foot from increased pressure and then unlock the presser-foot, and to restore such increased pressure and lock the presser-foot again in its position of increased pressure.

3. In a sole-sewing machine, the combination of a work support, a movable presser-foot, means to force said presser-foot against the work on the work support with a normally light pressure, means to increase said pressure at intervals and to lock said presser-foot when the pressure has been increased, means under control of the operator to release the presser-foot from increased pressure and thereafter unlock the presser-foot, and automatically acting means to restore such increased pressure and lock the presser-foot in its position of increased pressure.

4. In a sole-sewing machine, the combination with a work support, of a movable presser-foot, means to force said presser-foot against the work on the work support with a normally light pressure, means to increase said pressure at intervals and to lock said presser-foot when the pressure has been increased, means under control of the operator to release the presser-foot from increased pressure and to thereafter unlock the presser foot, and means for thereafter lifting the presser foot from the work.

5. In a sole-sewing machine, the combination of a work support, a movable presser-foot, means to force the presser-foot against the work on the work support with a normally light pressure, means to increase said pressure at intervals and to lock the presser-foot in its position of increased pressure, means operative by stopping the machine to



release the presser-foot from increased pressure and to unlock the presser-foot and devices thereafter operative through said last mentioned means to raise the presser-foot.

5 6. In a sole-sewing machine, the combination of the shaft, a work support, a movable presser-foot, means to force the presser-foot against the work on the work support with a normally light pressure, means to increase  
10 said pressure at intervals and to lock the presser-foot in its position of increased pressure, means for reversing the movement of the shaft, and means operative on such reverse movement to release the presser-foot  
15 from increased pressure and to unlock the presser-foot.

7. In a sole-sewing machine, the combination with a work support, of a movable presser-foot, a spring acting with a normally  
20 light tension to force the presser-foot against the work on the work support, means to increase the pressure of the presser-foot upon the work at intervals and to lock the presser-foot in position of increased pressure,  
25 and means under control of the operative to first relieve the presser-foot of said increased pressure and thereafter unlock said presser-foot.

8. In a sole-sewing machine, the combination with a work support, of a movable  
30 presser-foot, a spring acting with a normally light tension to force the presser-foot against the work on the work support, means to increase the pressure of the presser-foot upon the work at intervals and to lock the  
35 presser-foot in position of increased pressure, means under control of the operative to first relieve the presser-foot of said increased pressure and thereafter to unlock  
40 said presser-foot, and means to automatically restore the increased pressure of the presser-foot and to lock said presser-foot in position of increased pressure.

9. A sole-sewing machine comprising, in  
45 combination, a work support, feeding devices to move the work at intervals, a presser-foot, means to produce pressure of the presser-foot upon the work; means to increase said pressure of the presser-foot at intervals  
50 and to lock the presser-foot in position of increased pressure during intervals between feed movements, means under control of the operator to relieve the presser-foot from such increased pressure and to then unlock the  
55 presser-foot at desired times during the intervals between feed movements, and means to automatically restore the increased pressure of the presser-foot and to lock the presser-foot in position.

60 10. A sole-sewing machine having in combination a driving shaft, a cam operated thereby, a work support, a presser-foot normally held against the work with a light pressure, means including a lever operated

at intervals from said cam to increase the  
65 pressure of the presser-foot upon the work and to lock the presser-foot in position of increased pressure, and means for moving said lever independent of the cam for releasing the increased pressure of the presser-  
70 foot and unlocking the same.

11. A sole-sewing machine having, in combination, a shaft, driving and stopping means therefor including means for reversing the rotation of said shaft as the machine  
75 is finally brought to rest, a cam on said shaft, a work support, a presser-foot normally held in light contact with the work, means to increase the pressure of the presser-foot upon the work at intervals and lock it in  
80 position of increased pressure, and means rendered effective by the said cam upon reverse movement thereof to release the increased pressure of the presser-foot and unlock the same.  
85

12. In a sole-sewing machine, the combination of a shaft, driving and stopping means therefor including means for reversing the rotation of said shaft as the machine is  
90 finally brought to rest, a work support, a presser-foot normally held in light contact with the work on said support, a lever, lever operating means for periodically moving said lever from said shaft to increase the pressure of the presser-foot and lock it in  
95 position of increased pressure, and means operative on reverse movement of said shaft for moving said lever independent of said lever operating means to release increased pressure of the presser-foot and unlock the  
100 same.

13. In a machine of the character described, the combination of a driving shaft, starting and stopping mechanism therefor,  
105 a work support, a presser-foot and means to force it with a light pressure upon the work placed on said support, means including a lever and its actuating cam operated from the driving shaft to increase the pressure of the presser-foot upon the work at intervals  
110 and to lock the presser-foot in position of increased pressure, means independent of said actuating cam for moving said lever to release the presser-foot from its position of increased pressure and to unlock the same as  
115 the machine is stopped and to restore said increased pressure and lock the presser-foot in its position of increased pressure when the machine is started.

14. In a sole-sewing machine, the combination of a driving shaft, a work support, a  
120 presser foot normally held against the work with a light pressure, a lever operated from said shaft at intervals, a pawl movable with said lever, means operated by said pawl for  
125 imparting increased pressure to the presser foot, a locking pawl for holding the presser foot in position of increased pressure, and



means under control of the operative to successively relieve the presser foot of increased pressure and to unlock said locking pawl.

15. In a sole sewing machine, the combination of a driving shaft, a relatively movable work support and presser-foot, means to relatively move said work support and presser-foot to hold the work between them, means to increase the pressure of the work support and presser-foot upon the work, means for reversing the movement of the driving shaft, and means operative on such reverse movement to release the work from said increased pressure.

16. In a sole-sewing machine, the combination of a driving shaft, a relatively movable work-support and presser-foot, means

for relatively moving said work-support and presser-foot to hold the work between them, means to increase the pressure of the work-support and presser-foot upon the work, means for arresting the driving shaft and causing its movement to be reversed and the machine stopped with the parts in predetermined position, and means operative on such reverse movement to release the work from said increased pressure.

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

THOMAS G. PLANT.

Witnesses:

IRVING U. TOWNSEND,  
ALFRED H. HANDLEY.