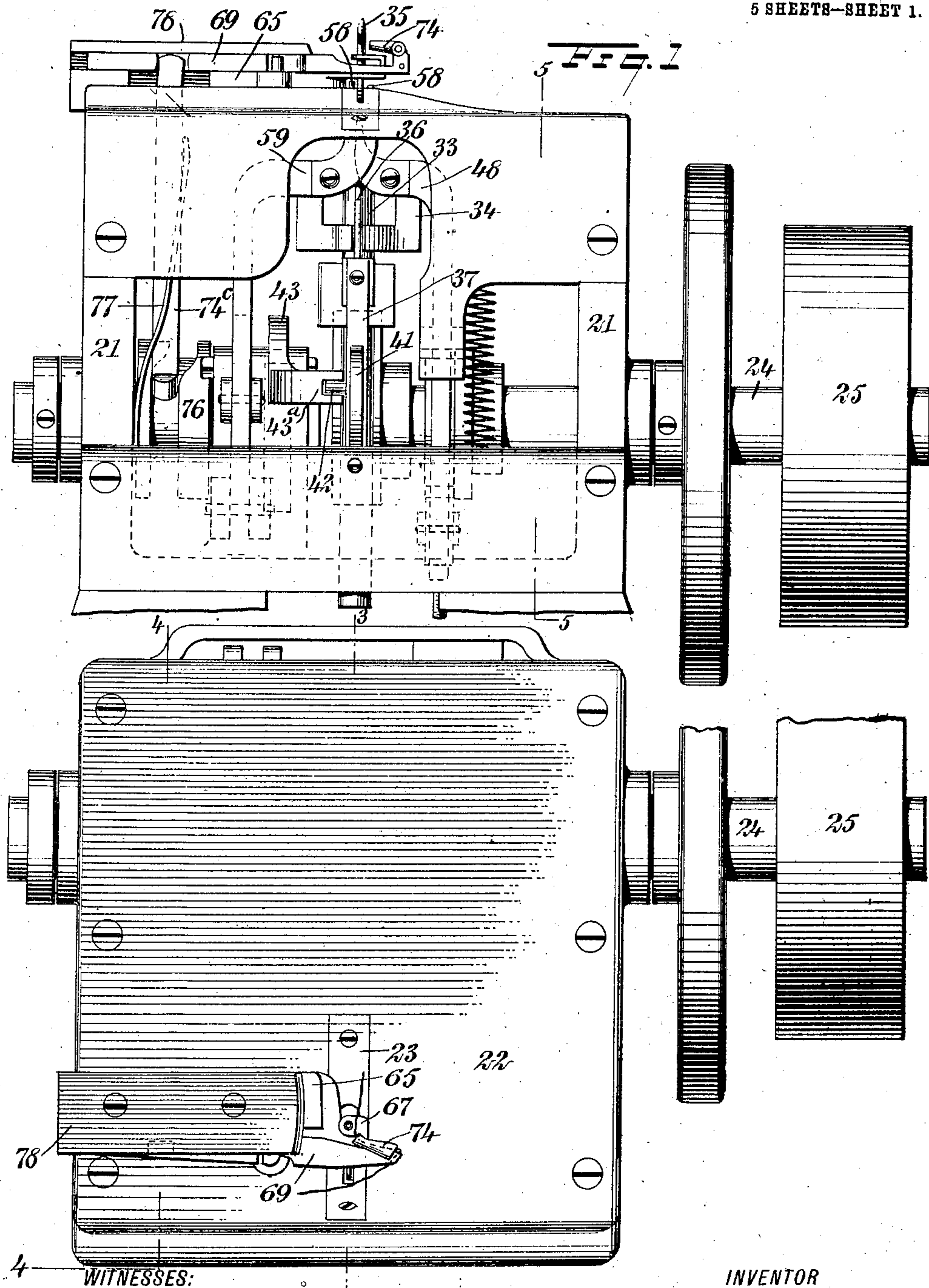


No. 850,055.

PATENTED APR. 9, 1907.

J. A. RHOULT.
SHOE SEWING MACHINE.
APPLICATION FILED MAY 26, 1905.

5 SHEETS—SHEET 1.



WITNESSES:
John A. Bergstrom
Isaac B. Owens.

FIG. 2

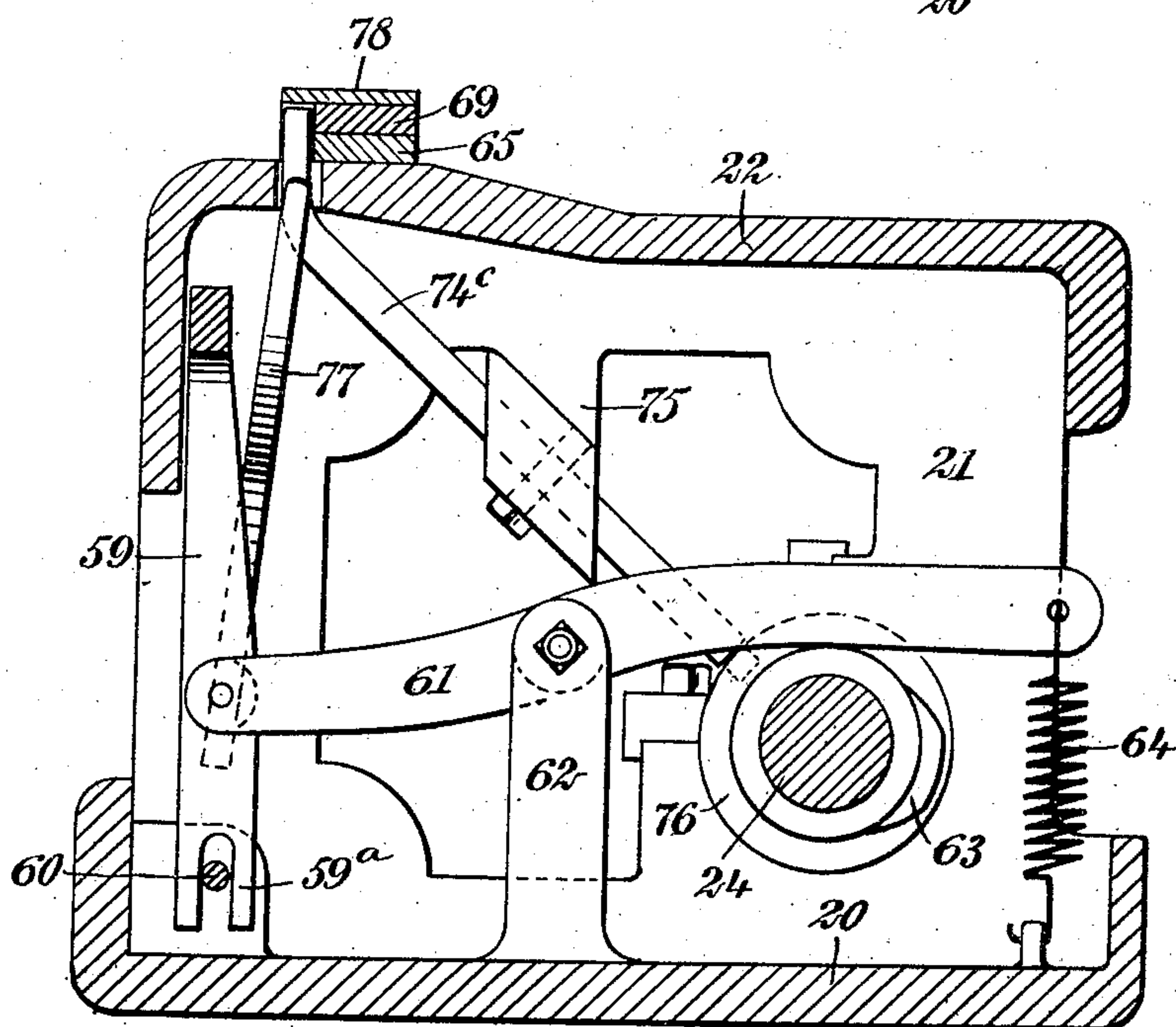
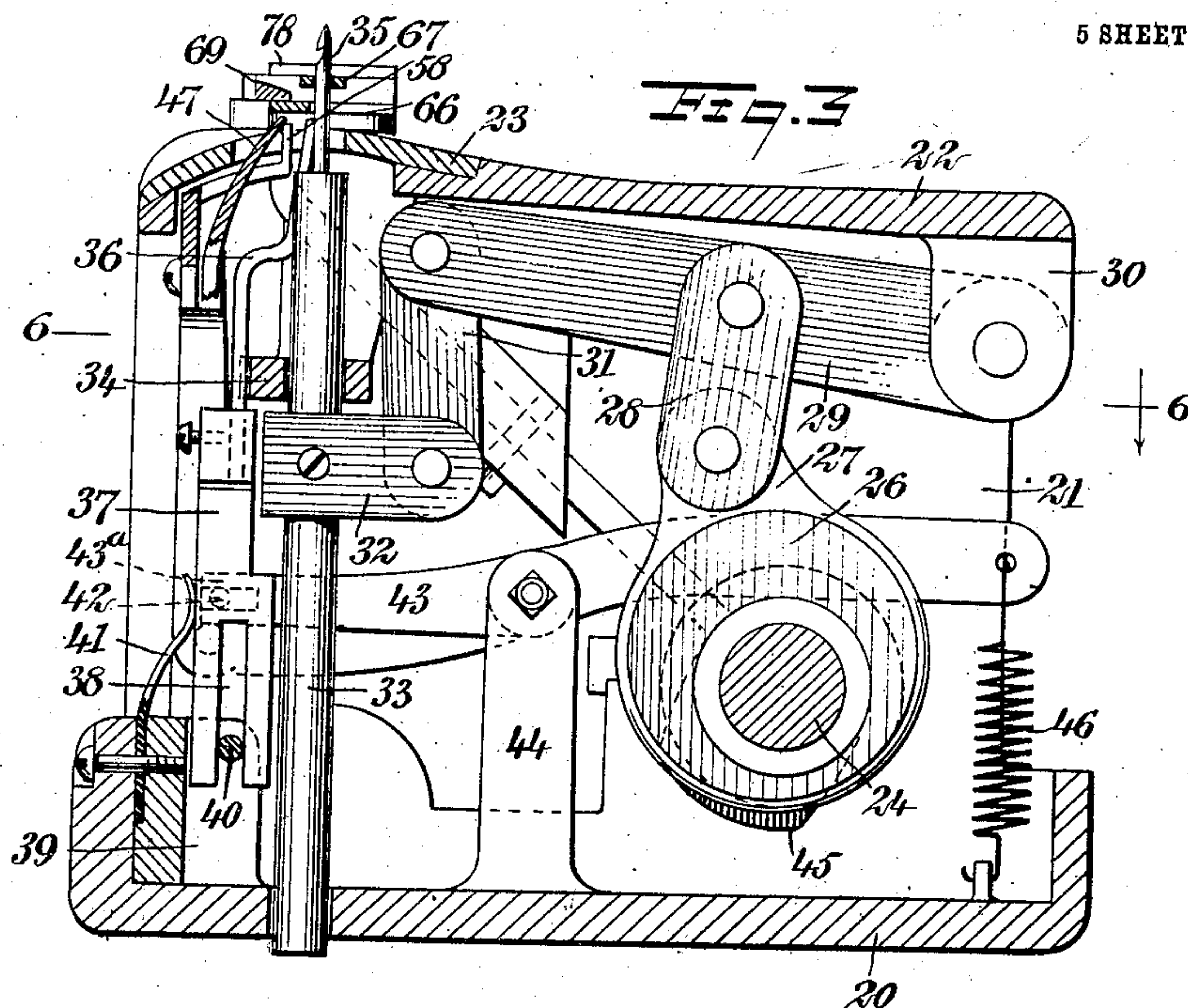
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APPLICATION FILED MAY 26, 1906.

5 SHEETS—SHEET 2.



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FIG. 4

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PATENTED APR. 9, 1907.

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5 SHEETS—SHEET 4.

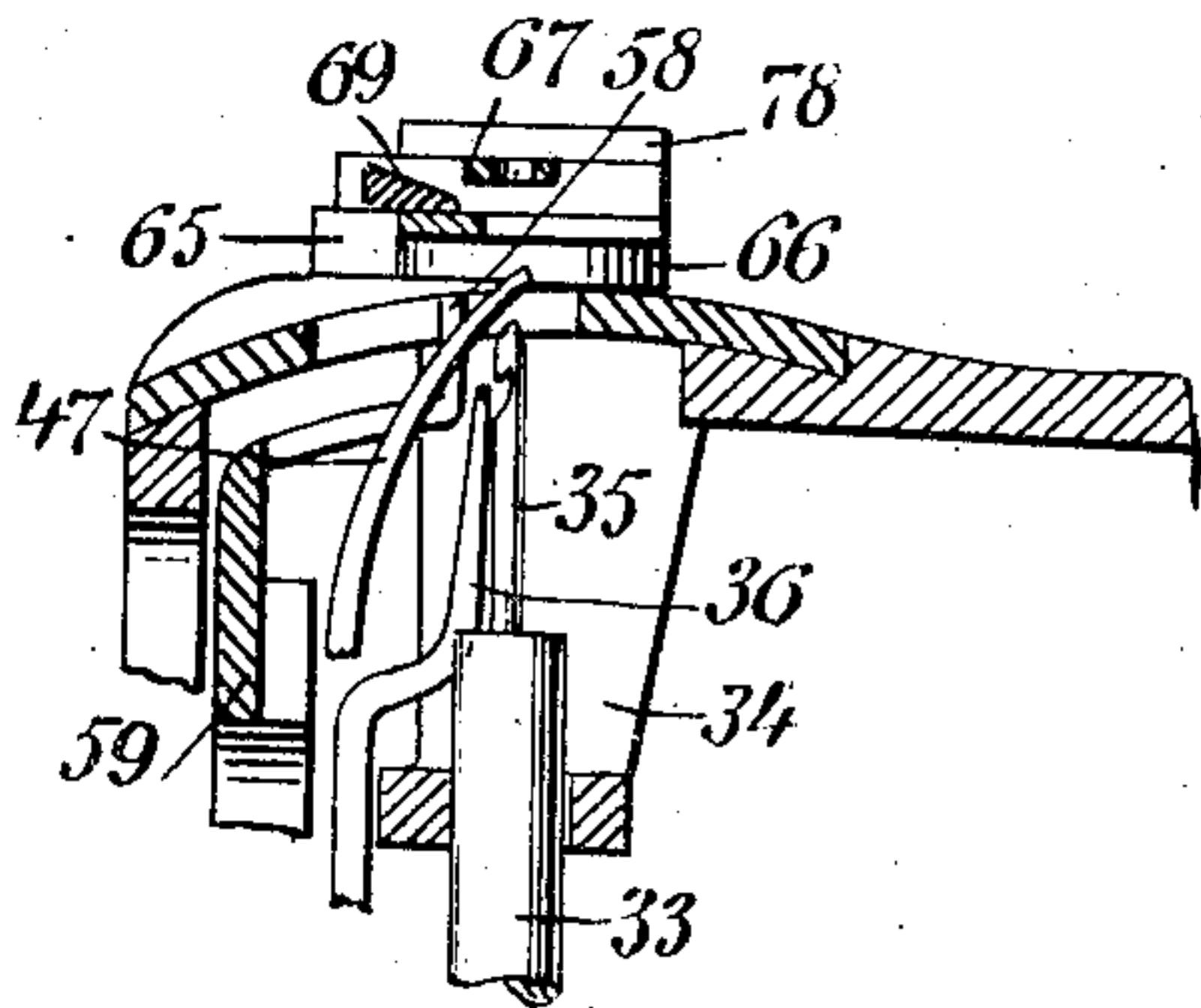


Fig. 7

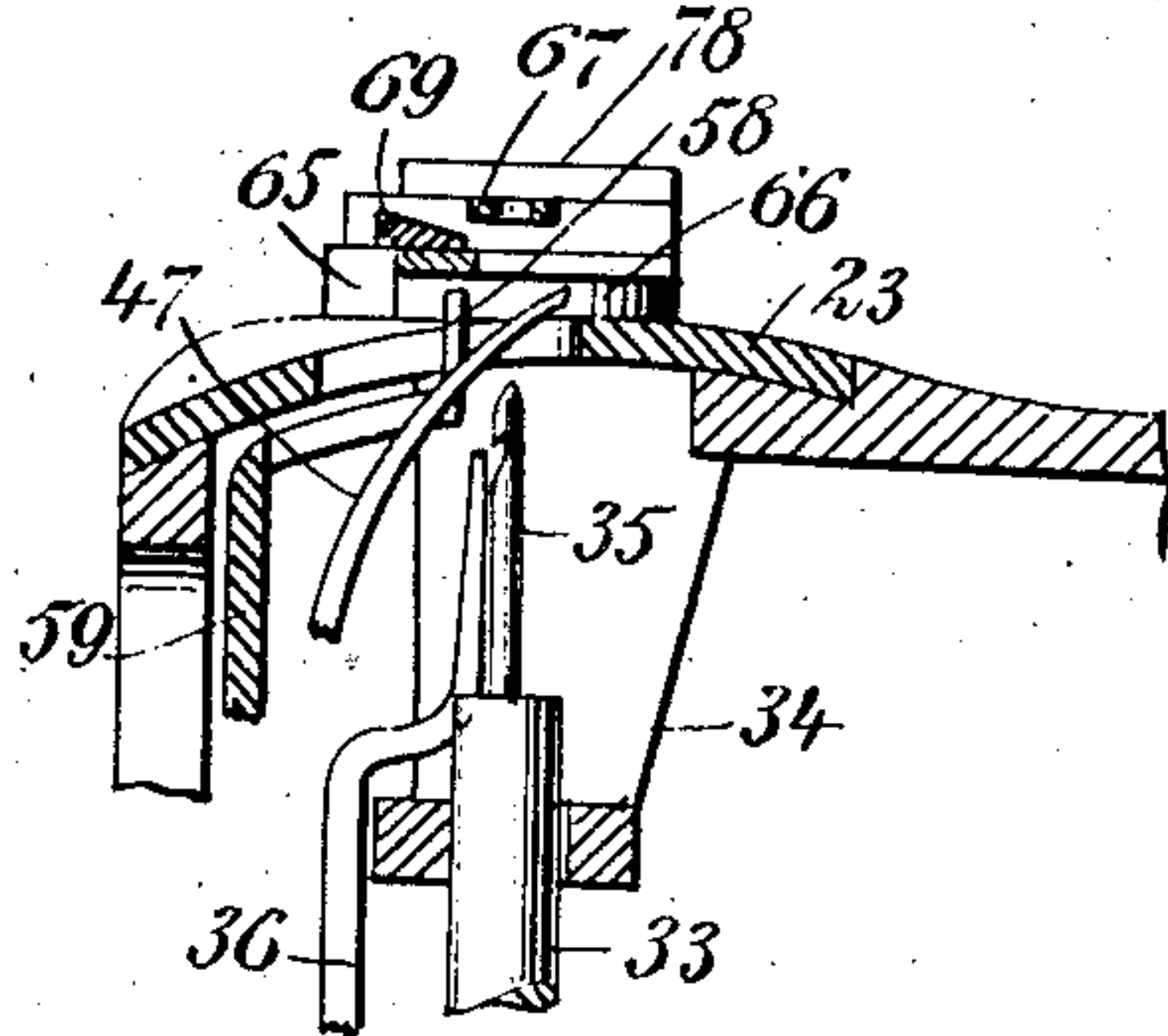


Fig. 8

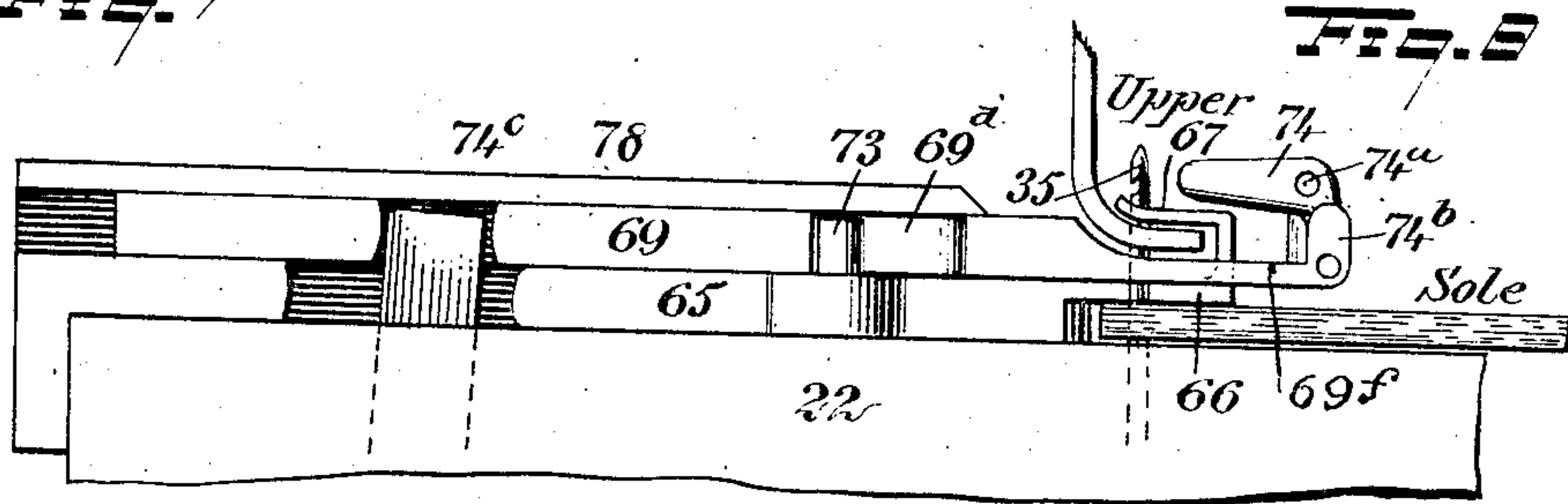


Fig. 9

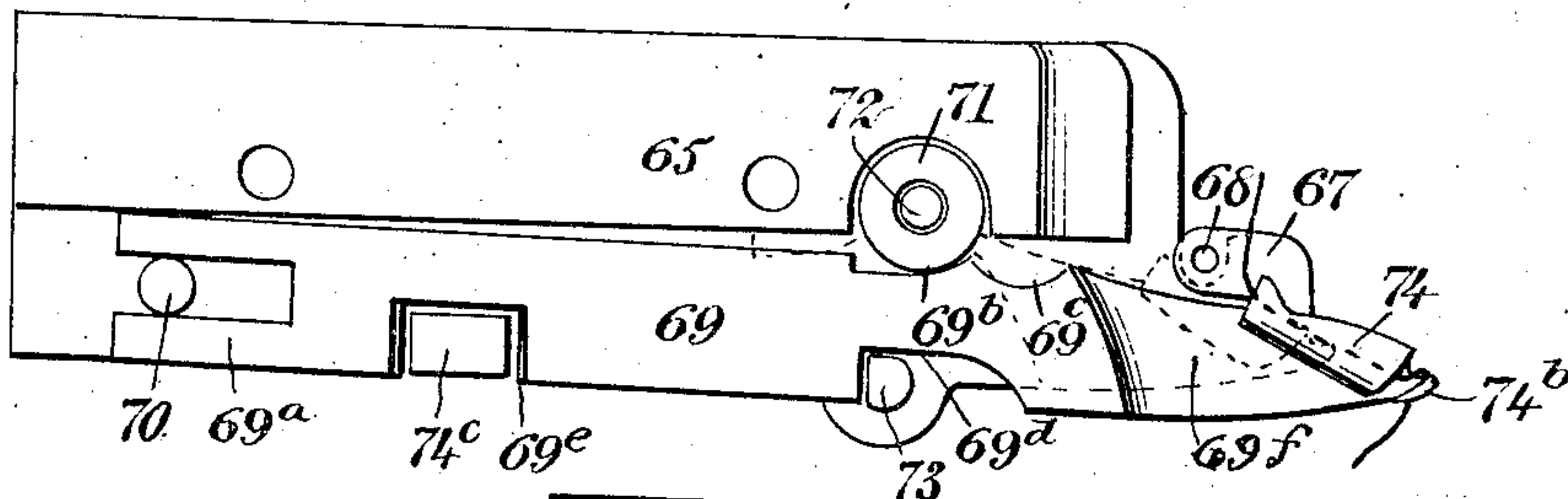


Fig. 10

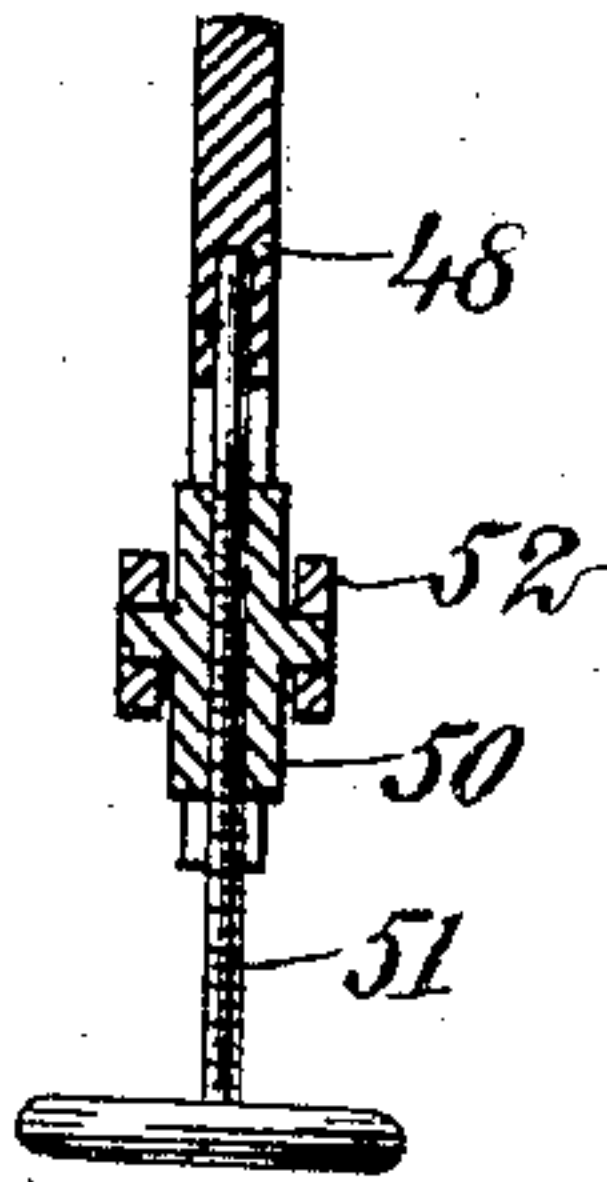


Fig. 11

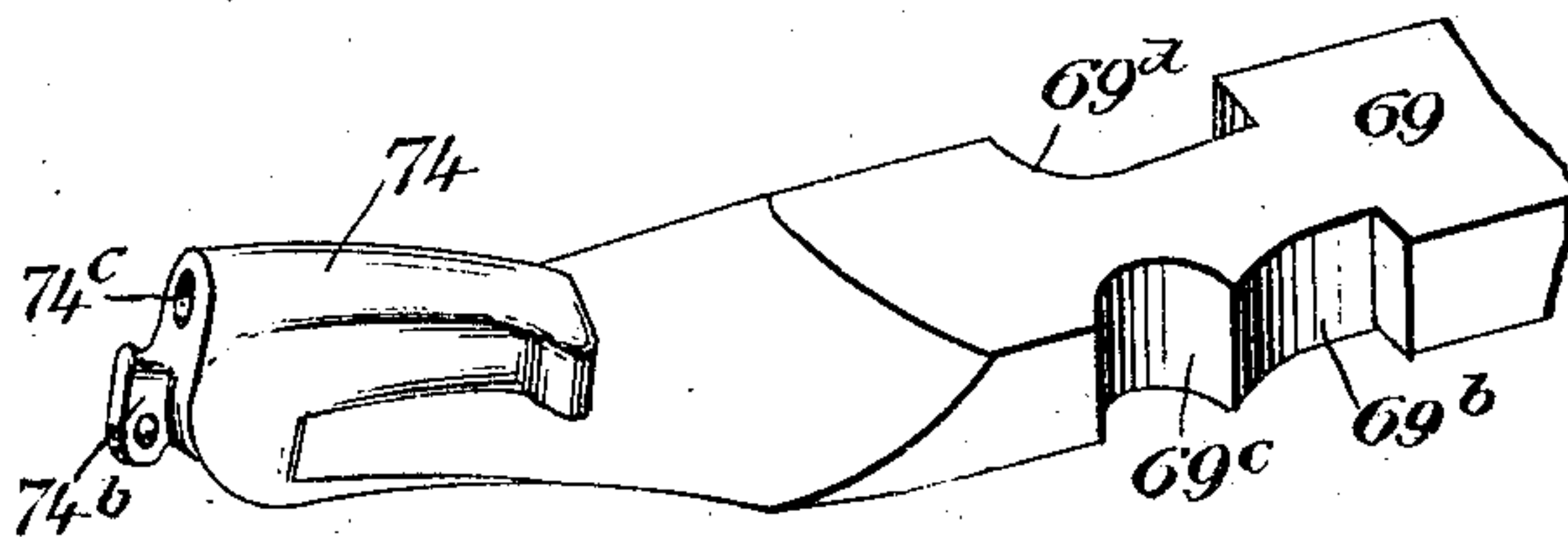


Fig. 12

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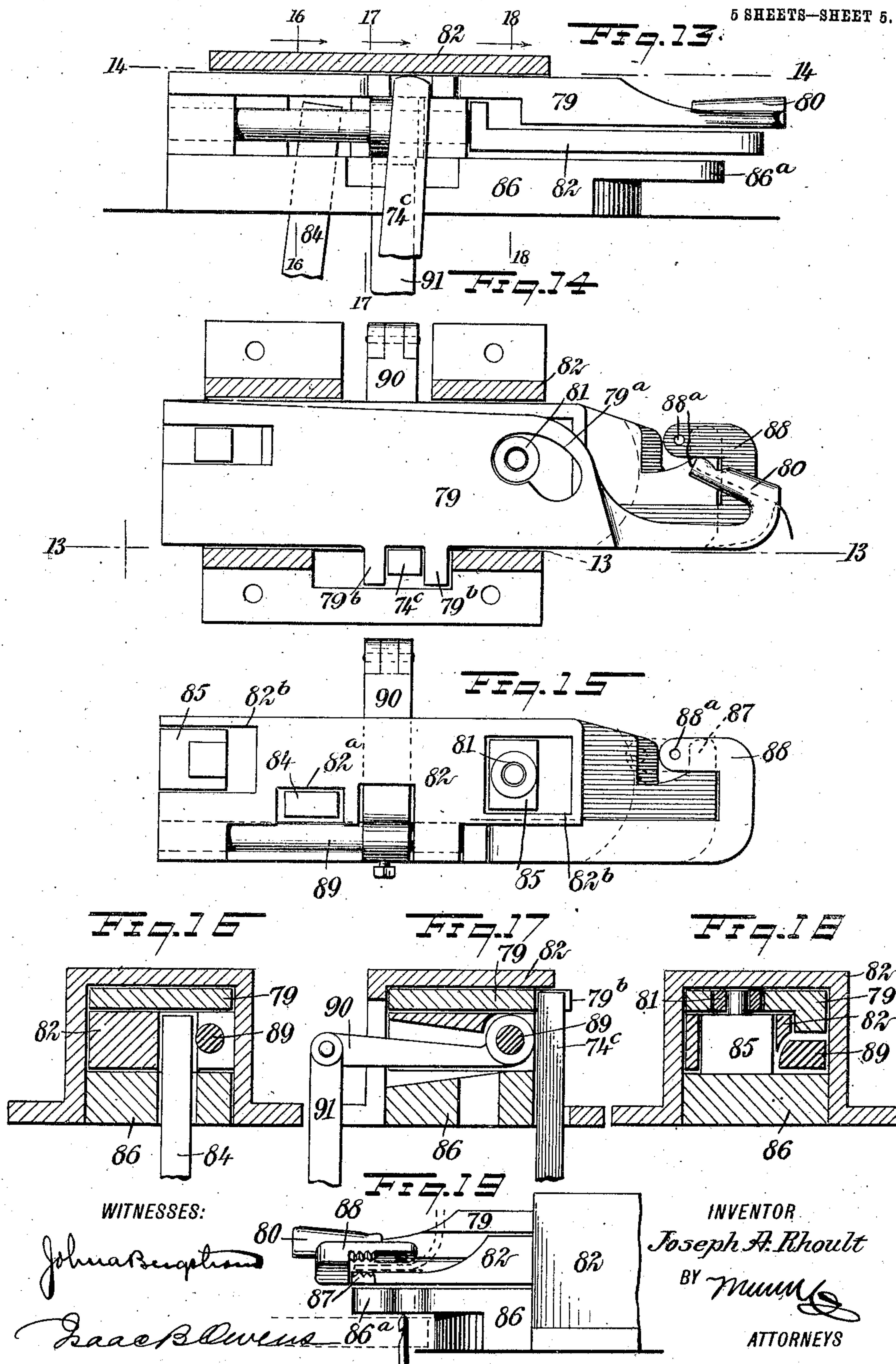
No. 850,055.

PATENTED APR. 9, 1907.

J. A. RHOULT.
SHOE SEWING MACHINE.

APPLICATION FILED MAY 26, 1906.

5 SHEETS—SHEET 5.



UNITED STATES PATENT OFFICE.

JOSEPH A. RHOULT, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO HARRIS W. SPAULDING, OF HAVERHILL, MASSACHUSETTS.

SHOE-SEWING MACHINE.

No. 850,055.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed May 26, 1905. Serial No. 262,367.

To all whom it may concern:

Be it known that I, JOSEPH A. RHOULT, a citizen of the United States, and a resident of Haverhill, in the county of Essex and State of Massachusetts, have invented a new and Improved Shoe-Sewing Machine, of which the following is a full, clear, and exact description.

The invention relates to a machine especially designed for sewing shoes and other heavy work and to be used in connection with the novel process for making shoes disclosed and claimed in my prior patent, No. 789,066, granted May 2, 1905, according to which process the uppers of the shoes are sewed to the soles in their natural position, thus avoiding the necessity of subsequently "turning" the shoe.

The invention also involves various improvements in the shoe-sewing machine forming the subject of my prior patent, No. 796,866, dated August 8, 1905.

The object of my present invention is to simplify and otherwise improve the means for carrying the thread.

It is also an object of my invention to improve the stitch-forming devices and provide means for firmly holding the sole during the stitching operation and for releasing the sole during the feeding movement thereof.

A further object of the invention is to simplify and render more certain of operation the devices for driving the thread-carrier and stitch-forming elements; and still a further object is to adapt the machine to the work of sewing felt or other fabric uppers to the soles by providing means for positively gripping and feeding the felt upper, as well as the sole.

To these ends my invention resides in certain novel features of construction and combinations of elements which will be fully set forth hereinafter and pointed out in the claims.

Reference is to be had to the accompanying drawings, which illustrate, as an example, one manner of practically embodying my invention, in which drawings like characters of reference indicate like parts in the several views, and in which—

Figure 1 is a front elevation of the machine. Fig. 2 is a plan view of the same. Fig. 3 is a vertical section on the line 3 3 of Fig. 2, showing especially the needle-bar, cast-off,

and means for operating the same. Fig. 4 is a section on the line 4 4 of Fig. 2, showing especially the means for operating the dog for holding the work during the operation of the needle. Fig. 5 is a section on the line 5 5 of Fig. 1, particularly illustrating the feed-dog and its operating devices. Fig. 6 is a sectional plan view on the line 6 6 of Fig. 3, showing the prime mover of the machine, the cams thereof, and various levers driven by the cams and transmitting their movement to the stitch-forming and thread-carrying devices. Figs. 7 and 8 are detail sectional views showing the stitch-forming devices in operative adjustment. Fig. 9 is an enlarged front elevation of the thread-carrier, showing also the needle and the sole and upper in position. Fig. 10 is a plan view of the thread-carrier with the top or face-plate thereof removed. Fig. 11 is a detail section on the line 11 11 of Fig. 5, illustrating the device for adjusting the feed-dog, so as to adapt it to various thicknesses of sole-leather. Fig. 12 is a detail perspective view of the thread-carrier. Fig. 13 is an enlarged front elevation of the thread-carrier and upper-guide adapted for use in connection with the uppers or felt or other soft material, said figure having the casing of the thread-carrier and upper-guide in section on the line 13 13 of Fig. 14. Fig. 14 is a plan view of the parts shown in Fig. 13, the casing being in section on the line 14 14 of Fig. 13. Fig. 15 is a plan view of the upper-guide, the thread-carrier being removed therefrom. Figs. 16, 17, and 18 are respectively cross-sections on the line 16 16, 17 17, and 18 18 of Fig. 13. Fig. 19 is an enlarged detail view illustrating the upper-guide of Figs. 13 to 18 and showing by dotted lines the relative positions of the sole and upper.

The apparatus as here shown has a frame formed of a base 20, having side parts 21 rising therefrom and supporting a work-plate or table 22. This work-plate may, if desired, be provided with a stitch-plate 23 let thereinto, as the drawings show. Mounted on the side parts 21 of the frame is a rotating shaft 24, constituting the prime mover of the machine and provided with a band-wheel 25, through the means of which the shaft may be continuously rotated.

The shaft 24 is provided (see Figs. 3 and 6) with an eccentric 26, the strap 27 whereof is

joined by a link 28 to a lever 29. This lever lies above the shaft 24 under the work-plate 22 and has its rear end fulcrumed on a lug 30, depending from the work-plate. At its free or forward end the lever 29 is joined to a link 31, which extends downwardly and is pivoted to a bracket 32, fastened to the needle-bar 33. The needle-bar extends vertically and is reciprocally held in the base 20 and in a hanger 34 depending from the work-table 22. The needle-bar 33 carries at its upper end a needle 35, which has a hook, as shown, and is adapted to move with the bar 33 back and forth through the stitch-plate 23. The upper portion of the needle-bar 33 has a groove 33^a therein (see Fig. 6) and in this groove plays the cast-off 36. The elements 35 and 36, coacting with the thread-carrier to be hereafter described, form the usual chain-stitch, as will be understood from the prior art. The cast-off 36 is attached to a slide 37, which operates vertically and lies in front of the needle-bar 33. Said slide is provided at its lower portion with a fork 38, which fits in a guide 39, carried on the base 20. Said guide is provided with a pin 40, which passes between the tines of the fork 38 to hold the slide 37 against lateral movement.

41 indicates a leaf-spring which is attached to the frame at its lower end, and which has its free upper end pressing against the slide 37, thus holding the cast-off 36 yieldingly in the groove 33^a in the needle-bar 33. The slide 37 has a pin 42, (see the full lines in Fig. 1 and broken lines in Fig. 3,) and this pin is received in the forked end 43^a of the operating-lever 43. This lever 43 is intermediately fulcrumed on a pedestal 44, rising from the base 20, and extends rearward over a cam 45, attached to the shaft 24, the rear end of the lever 43 having a retractile spring 46 in connection therewith, this spring holding the lever yieldingly engaged with the cam. By the devices above described the needle and cast-off are mounted in proper coactive relation and are coöperatively driven to form the stitch.

47 indicates the feed-dog which has a combined reciprocating and vibratory movement through the stitch-plate 23, periodically engaging the sole and feeding the same in a position to receive the next stitch. The feed-dog is carried on the upper end of a lever 48, (see Fig. 5,) which has a combined vibratory and sliding movement permitted by a fulcrum-pin 49 passing through a slot 48^a in and intermediate the ends of the lever. At its lower end the lever is bifurcated to receive a slide 50, which is adjustable longitudinally on the lever by means of a thumb-screw 51. To this slide is connected a floating lever 52. Said lever is pivoted to the slide and extends rearward over the base 20 and under the shaft 24, the rear end of the lever being loosely fitted in an orifice 20^a in the rear of

the base, the arrangement being such that the lever 52 is free to slide as well as to rock slightly in said cavity 20^a. A retractile spring 53 is joined to the front end of the lever 52 and extends upward under the work-plate 22, this spring 53 tending to lift the front end of the lever 52 and the parts 48 and 47 connected to the same. The lever 52 is also provided with a spring 54, which is joined to the lever and extends rearward alongside of the same into connection with the rear part of the base 20, this spring tending to move the lever 52 rearward, and through said lever tending to rock the lever 48. The lever 52 has a stud 55 rising therefrom in front of the shaft 24, and this stud is engaged by a cam 56, attached to the shaft. Engaging a track 52^a on the lever 52 is a cam 57, also attached to the shaft 24. Said cams 56 and 57, acting with the parts 55 and 52, impart to the latter element a combined reciprocating and vibrating movement, the lever 52 being returned from each movement, respectively, by the springs 53 and 54. This movement of the lever 52 in turn imparts to the lever 48 and feed-dog 47 their characteristic movement.

Operative through the opening in the stitch-plate 23 is a forked work-locking dog 58. (See Figs. 1, 3, 7, and 8.) This locking-dog is adapted to reciprocate in and out of engagement with the under side of the sole and to dwell in said engagement during the time that the needle is engaged with the sole, thus holding the sole firmly against the work-guiding devices, which will be hereinafter described. The lock-dog 58 is carried on a lever 59. (See Figs. 4, 7, and 8.) This lever extends downward and has its lower end forked, as indicated at 59^a, the fork receiving a fulcrum-pin 60, supported on the base 22. Articulated to the slide 59 is a locking-lever 61, intermediately fulcrumed on a pedestal 62, rising from the base 20 and extending rearward over the shaft 24. (See Fig. 4.) Said shaft has a cam 63 engaging the lever, and at its rear end the lever is connected with a retractile spring 64, which holds the lever firmly engaged with the cam. In this manner the lever 61 is periodically operated to raise and lower the slide 60, carrying the lock-dog, moving the lock-dog up in engagement with the work at the proper time and returning the dog from this engagement during the feeding movement.

Attached to the top of the work-plate 22 at one side of the stitch-plate 23 (see Fig. 2) are the work-guide and thread-carrying devices. The work-guide comprises a plate 65, attached to the work-plate 22 and having an end 66 overhanging the stitch-plate and spaced therefrom so as to permit the sole of the shoe to pass between said end 66 and the stitch-plate. From said end or extension 66 the work-guide is extended upward and thence inward to form a hook 67, which has an

opening 68 therein. (See Fig. 10.) Through this opening the needle 35 is adapted to pass, the hook 66 serving to receive the lower edge of the upper, as Fig. 9 shows. By these devices the sole and upper are guided into engagement with the stitch-forming devices and held in the proper position during the formation of the stitch.

Mounted on top of the plate 65 or directly adjacent thereto is a slide 69, which has a forked end 69^a, receiving a pin 70, projecting from the plate 65 or other suitable support. At the end opposite the fork 69^a the slide 69 is provided with two indentations 69^b and 69^c in its inner edge. These indentations are adapted to engage a roller 71, mounted on a pin 72, which is carried by the plate 65 or work-table 22, as may be desired. At the side opposite the edge having the indentations 69^b and 69^c the slide 69 is provided with an indentation 69^d, which receives a pin 73 rising from the plate 65. By these devices the slide is mounted so that it may reciprocate, and owing to the cavity 69^b and 69^c and the roller 71 the slide is given a lateral as well as a longitudinal movement. At the end adjacent to the stitch-plate 23 the slide 69 is formed with a horn 74, which has an opening 74^a therein adapted to receive the thread. At the base the horn is formed with a lug 74^b, also perforated to receive the thread which is engaged with the horn, as indicated in Figs. 2 and 10. The horn is connected with the body of the thread-carrier by a reduced portion 69^f and the horn is adapted to move back and forth across the path of the needle so as to carry the thread into engagement therewith, permitting the loops to be formed preliminary to the formation of the stitch. As best shown in Fig. 9, the reduced part 69^f of the thread-carrier passes between the upper and sole, carrying the thread inside of the shoe. A similar position is taken by the work-holder. The slide 69 is operated by a lever 74^c, which engages in a cavity 69^e, formed in the slide. Said lever is fulcrumed intermediately on a bracket 75, depending from the table 22, and extends downward and rearward to a grooved cam 76, attached to the shaft 24, this cam imparting a vibrating movement to the lever and said lever moving the slide back and forth, as described. 77 indicates a spring which presses the lever 74^c yieldingly to hold it so as to move the slide 69 and the attached thread-holder into the position shown by broken lines in Fig. 9. 78 indicates a cover-plate which is applied to the work-guiding and thread-carrying devices to inclose the same.

In constructing shoes or slippers having felt fabric or other limber material difficulty has been experienced in holding the felt in position for stitching. In order to overcome

this disadvantage, I provide an attachment shown in Figs. 13 to 19. In this case the thread-carrier slide 79 is provided, which is essentially the same as the slide 69, and the slide 79 carrying a horn 80 with an opening therein to receive the thread, as before described. Said slide is formed with an irregular slot 79^a, which receives a roller 81, thus giving the slide a lateral movement during its reciprocation the same as before described. The slide 79 is provided with spaced lugs 79^b, which receive the operating-lever 74^c. The felt-holding device, however, as shown best in Fig. 15, comprises a sliding body portion 82, with a cavity 82^a therein, receiving a device 84, by which the slide is moved back and forth. This device 84 may be of any desired form and operated by any desired means. The slide 82 is guided by means of studs 85, rising from a base-plate 86, the studs fitting within the opening or cavity 82^b in the slide. The slide 82 is provided with a lateral extension 87 at the end overhanging the stitch-plate 22, this lateral extension being preferably corrugated and coacting with a jaw 88, carried on a rock-shaft 89, suitably mounted on the slide 82. Said rock-shaft 89 is provided with an arm 90, to which is connected any desired means 91 for operating the arm. The end of the jaw 88 is provided with an opening 88^a, serving for the passage of a needle, and below the slide 82 and its jaws the base-plate 86 is provided with a reduced extension 86^a, which overhangs the work-plate to form an opening for the reception of the sole, the same as the reduced part 66 in Fig. 8. The lever 74^c imparts to the slide 79 and the thread-carrying horn 80 the same movement described with respect to the slide 69, (shown in Fig. 10,) thus carrying the thread back and forth across the path of the needle. The slide 82 is reciprocated back and forth laterally of the stitch-line over the stitch-plate by the device 84, and simultaneously the shaft 89 is rocked so as to engage and disengage the jaws 87 and 88. These jaws open each time that they move away from the stitch-line or rightward from the position shown in Fig. 19, the felt upper being inserted between said jaws. When the jaws return into engagement with each other, the felt will be gripped between the jaws, and then the slide 82 and its attachments moved back to the position shown in Fig. 19, carrying the felt with it and holding the felt securely while it is stitched, the needle passing up over the opening 88^a in the jaw 88. As the needle descends the slide 82 moves back again and the jaws again open taking a fresh hold on the felt upper and again drawing it into position. It will be seen that this device intermittently engages the felt upper and draws it back into position for sewing each time that a stitch is formed.

these devices constituting a positively-acting means for guiding and holding the felt upper in the proper position.

In the organized operation of the machine the sole is placed over the work-plate 23 to run under the extension 66 in Fig. 9 or 86^a in Fig. 13, and the upper is placed in the hook 67 of Fig. 9 or between the jaws 87 and 88 of Figs. 13 to 19. In either case the workholder and thread-carrier pass between the sole and upper, the thread-carrier moving in the space between said parts thus operating inside of the shoe, and in the form shown in Figs. 13 to 19 the same is true of the jaws 87 and 88. In this way the sole and upper are held in the proper position for stitching, and are guided in their movements through the machine. Upon starting the revolution of the shaft 24 the cams and driving devices actuated thereby are set into motion. The needle descends, passing through the sole and upper, and the thread-carrying horn 80 or 74, as the case may be, moves the thread into the path of the hook in the needle, so that upon the descent of the needle a loop is formed and drawn through the work. As the needle withdraws from the work the looper 36 engages the needle performing its usual functions. While the needle was passing up through the work and back to its lower position, the lock-dogs 58 were raised by the devices for operating them, thus clamping the sole firmly under the work-guiding extension 66 or 86^a. Then as the needle descends the feed-dog 47 passes through the stitch-plate, engages the work, and advances it into position to receive the next stitch. This operation is carried on until the upper is entirely stitched to the sole excepting for a short space at the back of the heel. The upper and sole stitched in this manner are then slipped out of engagement with the work-holding and thread-carrying devices and the unstitched portion of the upper of the shoe may be secured to the sole or heel by one or two tacks driven in at this point.

Having thus described the preferred form of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sewing-machine, the combination with a thread-carrier, of a hooked needle, a needle-bar, means for reciprocating the same, a cast-off coacting with the needle, a laterally-yielding slide connected to the cast-off, a spring pressing the slide laterally to hold the cast-off engaged with the needle, and means for operating the slide.

2. In a sewing-machine, the combination with a frame, of a thread-carrying device, a needle-bar, a hooked needle attached thereto, means for operating the needle-bar, said bar having a groove therein, a cast-off adapted to lie in said groove, a laterally-yielding slide to which the cast-off is attached, a spring pressing the slide laterally to hold the cast-off in

said groove of the needle-bar, and means for operating the slide.

3. In a sewing-machine, the combination with the thread-carrying devices, of a prime-mover shaft, a needle-bar, a needle carried thereby, means for operating the needle-bar from said prime-mover shaft, a cast-off, means for mounting the cast-off, devices for driving the cast-off from said prime-mover shaft, a lock-dog adapted to hold the work during the formation of the stitch, a slide carrying the lock-dog, means for operating the slide from the prime-mover shaft, a feed-dog, a vibrating and sliding lever to which the feed-dog is attached, and means for operating said lever from the prime-mover shaft.

4. A sewing-machine comprising a work-table, a work-guide mounted directly thereon and supported directly thereby, a thread-carrier also mounted directly on and supported by the table, stitch-forming devices including a hooked needle and a cast-off, the needle being movable through the table, means located below the table for operating the stitch-forming devices and thread-carrier, a work-locking dog located below the table and adapted to engage the work during the formation of the stitch, and means for operating said dog.

5. A sewing-machine comprising a work-table, a work-guide mounted directly thereon and supported thereby, a thread-carrier also mounted directly on the table and supported by the same, stitch-forming devices including a hooked needle and cast-off, located below the table the needle being movable through the same, means located below the table for operating the stitch-forming devices and thread-carrier, a work-locking dog mounted below the table and adapted to press the work against the said guiding means during the formation of the stitch, and means for operating the locking-dog.

6. A sewing-machine comprising a work-table, stitch-forming devices, a work-guide mounted on the table, a thread-carrier mounted on the table, alongside the work-guide, means for operating the thread-carrier and stitch-forming devices, the work-guide comprising parts adapted to grip a section of the work, and means for operating said parts of the work-guide, for the purpose specified.

7. In a sewing-machine, the combination of a work-table, stitch-forming devices, means for operating the same, a thread-carrier mounted on the work-table, means for operating the thread-carrier, a sliding member juxtaposed to the thread member and adapted to move back and forth across the stitch-line, a jaw mounted on the sliding member and coacting therewith to grip a section of the work, and means for operating said sliding member and jaw.

8. In a sewing-machine, the combination

with a frame, of a thread-carrying means, a hooked reciprocating needle; a cast-off coacting with the needle, means for reciprocally mounting the cast-off, said means being also
 5 movable toward and from the line of movement of the needle, a spring for yieldingly pressing said means toward the line of the needle movement, and means for driving all of the parts in unison.

10 9. In a sewing-machine, the combination with a frame, of means for carrying the thread, a hooked needle, means for operating the thread-carrying means and the needle, a cast-off coacting with the needle, a slide
 15 mounting the cast-off, said slide having a slot therein, a stationary pin engaging in the slot of the slide, a spring pressing the slide laterally, and a means for reciprocating the slide.

20 10. In a sewing-machine, the combination with a frame, of means for carrying the thread, a needle, devices for operating the thread-carrying means and needle, a cast-off coacting with the needle, a slide mounting the cast-off, means connected with the slide
 25 to permit the same a limited lateral movement, a spring pressing the slide laterally, and a vibrating member engaging a part on the slide to reciprocate the slide, said engagement permitting lateral movement of the
 30 slide.

11. In a sewing-machine, the combination with a frame, of means for carrying the thread, a needle coacting therewith, a needle-bar attached to the needle and having a
 35 groove therein, means for operating the needle and thread-carrying means, a cast-off coacting with the needle and adapted to enter the groove of the needle-bar, a slide mounting the cast-off, devices engaging the slide to al-
 40 low the same a limited lateral movement, a spring laterally pressing the slide, and means for reciprocating the slide.

12. In a sewing-machine, the combination of a frame having a horizontally-disposed
 45 work-table, a work-guide mounted on top of the table and supported thereby, a thread-carrier mounted on the work-guide and horizontally movable, a needle, and complementary stitch-forming devices located below the
 50 table, the needle being movable upward through the same to coact with the work-guide and thread-carrier, and means for driving the operative parts.

13. In a sewing-machine, the combination
 55 of a frame having a work-guiding means thereon, a thread-carrier movably mounted on said work-guiding means, a member movably mounted on the thread-carrier and having a part adapted to engage the work, for
 60 the purpose specified, stitch-forming devices, and means for driving the operative parts.

14. In a sewing-machine, the combination with a frame having a table, work-guiding means thereon, a movable thread-carrier
 65 juxtaposed to said work-guiding means, a

movable member juxtaposed to the thread-carrier and having a jaw thereon, a rock-shaft mounted on the movable member, a jaw on the rock-shaft, the second-named jaw coacting with the first-named jaw, stitch-
 70 forming devices, and means for driving the operative parts in unison.

15. In a sewing-machine, the combination of a needle, a cast-off coacting therewith, means reciprocally mounting the cast-off,
 75 said means being also movable toward and from the line of movement of the needle to engage the cast-off with and disengage it from the needle, means for yieldingly pressing the cast-off toward the needle, comple-
 80 mentary stitch-forming devices, and means for driving the operative parts.

16. In a sewing-machine, the combination of a needle, means for mounting the same, a
 85 cast-off movable longitudinally of the needle and also movable transversely toward and from the same, means for mounting the cast-off, means for yieldingly pressing the cast-off toward the needle, complementary stitch-
 90 forming devices, and means for driving the operative parts.

17. A machine for sewing the uppers to the soles of shoes, having a thread-carrier comprising a body, a reduced end portion, and
 95 a thread-carrying horn supported by the reduced end portion, said reduced end portion being arranged to enter between the upper and sole to place the thread-carrying horn within the shoe.

18. A machine for sewing the uppers to the
 100 soles of shoes, having a thread-carrier comprising a body, a reduced end portion, a thread-carrying horn supported by the reduced end portion, said reduced end portion being arranged to enter between the upper
 105 and sole to place the thread-carrying horn within the shoe, and a means engaged with the body for operating the thread-carrier.

19. A machine for sewing the uppers to the
 110 soles of shoes having a thread-carrier with a portion arranged to extend between the sole and upper, and having its end extended upward and outward within the shoe to carry the thread over the intumed lower edge of the upper.
 115

20. A machine for sewing the uppers to the
 120 soles of shoes having a guide with a portion arranged to pass between the sole and upper, and extending upward and outward within the shoe to embrace the intumed lower edge of the upper, and a thread-carrier also arranged to pass between the sole and upper, and extending upward and outward
 125 inside of the shoe to carry the end of the thread over said lower edge of the upper.

21. A machine for sewing the uppers to the
 130 soles of shoes having a device arranged to extend between the sole and upper to grip the upper, for the purpose specified, and a thread-carrier arranged to enter between the

sole and upper to carry the thread inside of the shoe.

22. A machine for sewing the uppers to the soles of shoes having a device arranged to extend between the sole and upper to grip the upper, for the purpose specified, and a work-guide arranged to extend between the sole and upper.

23. A machine for sewing the uppers to the soles of shoes having a device arranged to extend between the sole and upper to grip the upper, for the purpose specified, a work-guide arranged to extend between the sole and upper, and a thread-carrier arranged to extend between the sole and upper to carry the thread inside of the shoe.

24. A machine for sewing the uppers to the soles of shoes, having a support for the sole, and a thread-carrier spaced therefrom a distance substantially equal to the thickness of the sole and arranged to enter between the sole and the upper to carry the thread inside the shoe.

25. A machine for sewing the uppers to the soles of shoes, having a stitching device, a support for the sole, and a thread-carrier spaced therefrom a distance substantially equal to the thickness of the sole and arranged to enter between the sole and the upper to carry the thread inside of the shoe at a point adjacent the stitching device.

26. A machine for sewing the uppers to the soles of shoes, comprising a support for the sole, a thread-carrier supported thereon, one end portion of said carrier being arranged to enter between the sole and upper to carry the thread inside the shoe, and means engaged with the other end portion of said carrier to operate the same.

27. A machine for sewing the uppers to the soles of shoes, having a support for the sole, a thread-carrier comprising a body portion and a thread-carrying portion proper, the latter being spaced from the support a distance substantially equal to the thickness of the sole and arranged to enter and operate between the sole and upper to carry the thread inside the shoe, and means engaged with the body of the thread-carrier to operate the same.

28. A machine for sewing the uppers to the soles of shoes, having a guide arranged to en-

ter between the upper and sole to hold said members in position for stitching, and a thread-carrier arranged to enter and operate between the upper and sole at a point adjacent said guide and to carry the thread inside of the shoe.

29. A machine for sewing the uppers to the soles of shoes, having a guide with a portion arranged to enter between the sole and upper and extending outwardly and upwardly within the shoe to impress the intumed lower edge of the upper, and a thread-carrier also arranged to enter between the sole and upper at a point adjacent the guide and to carry the thread inside of the shoe.

30. A machine for sewing the uppers to the soles of shoes, comprising in combination, a support for the sole, and a device carried thereby and arranged to enter between the sole and upper to grip the upper for the purpose specified.

31. A machine for sewing the uppers to the soles of shoes, comprising in combination, a stationary support for the sole, and a device spaced therefrom and having two jaws arranged to enter between the sole and upper to grip the upper for the purpose specified.

32. A machine for sewing the uppers to the soles of shoes, comprising in combination, a stitching device having a needle, a support for the sole, a device having a part lying in a plane substantially parallel to said support and arranged to extend between the sole and upper to grip the upper, and means for bodily reciprocating the said device laterally of the stitching-line.

33. A machine for sewing the uppers to the soles of shoes, comprising in combination, a support for the sole, a device spaced from said support a distance substantially equal to the thickness of the sole and having two jaws arranged to enter between the sole and upper to grip the upper, and means for bodily reciprocating the jaws laterally of the stitching-line.

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

JOSEPH A. RHOULT.

Witnesses:

JOHN J. RYAN,
MARGARET EMERSON.