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Patented July 23, 1901.

E. B. HESS.

OVERSEAMING ATTACHMENT FOR SEWING MACHINES.

(Application filed Apr. 28, 1900.)

(No Model.)

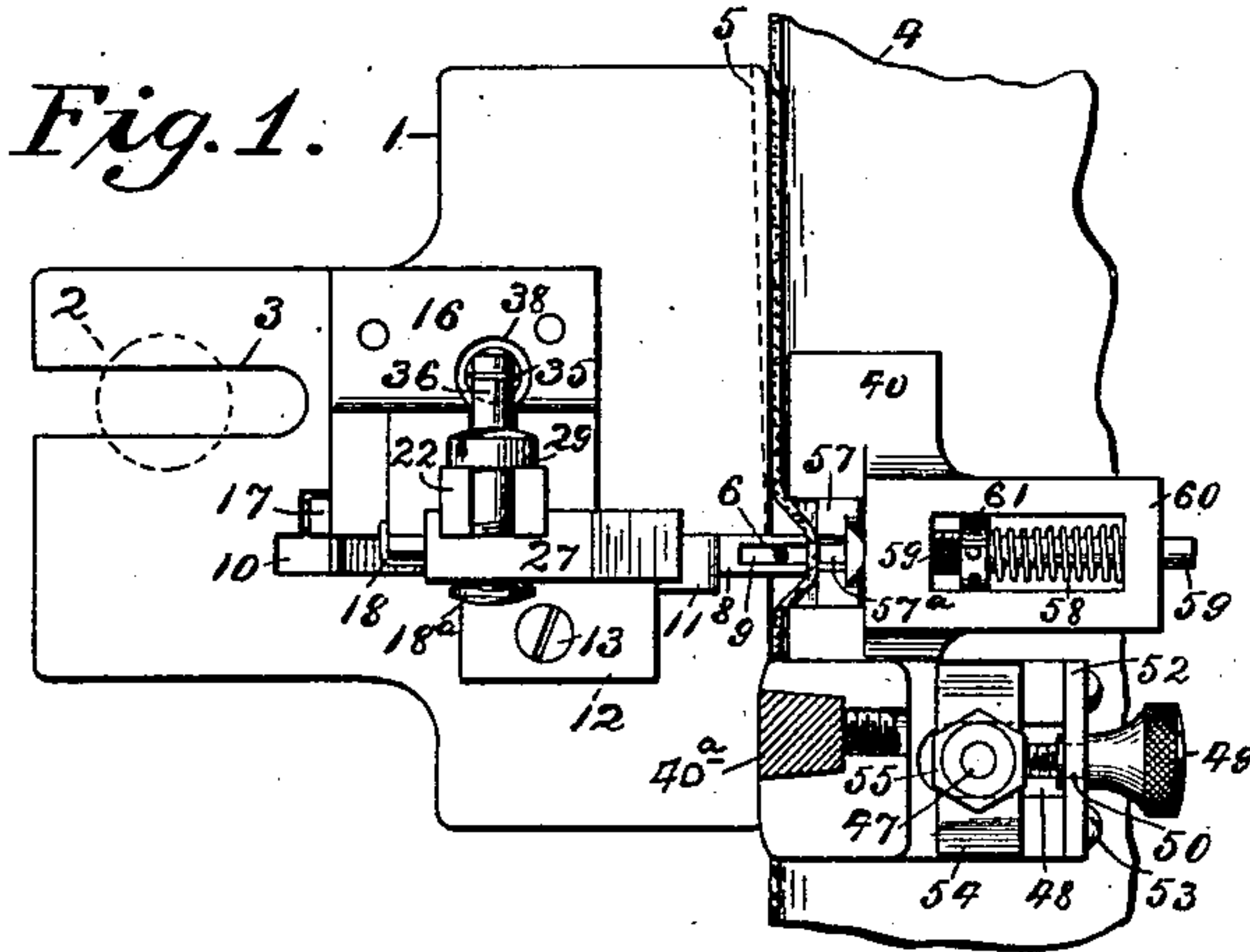


Fig. 2.

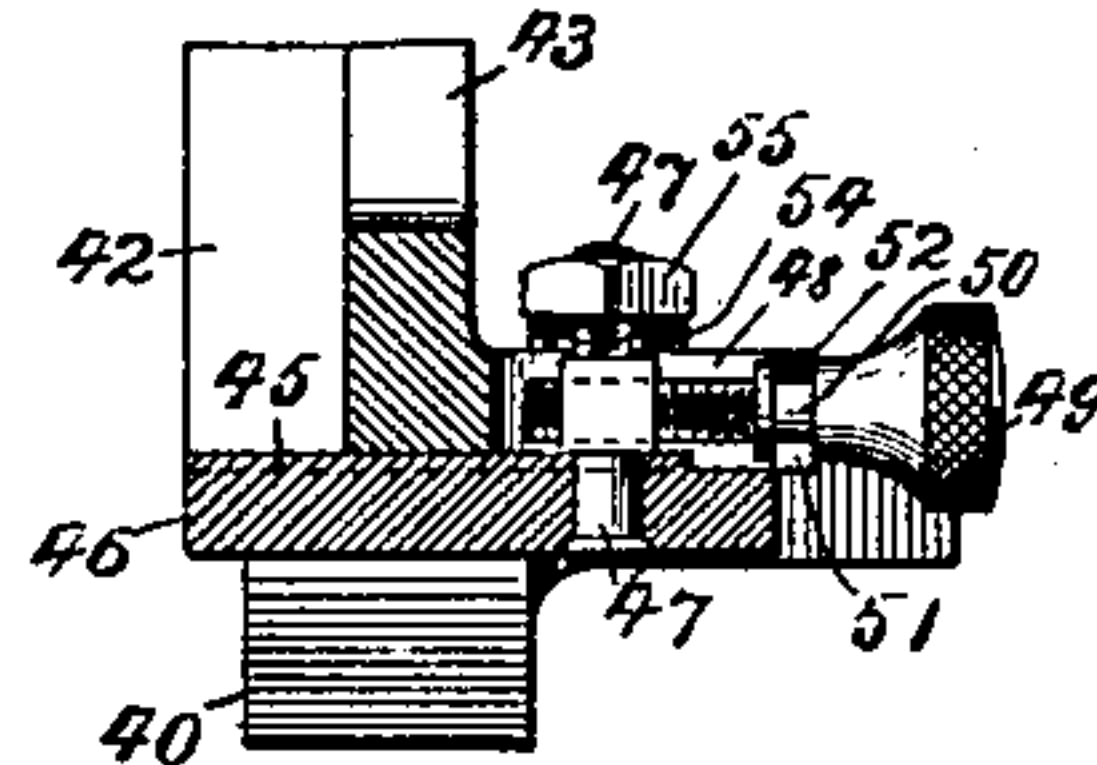


Fig. 4.

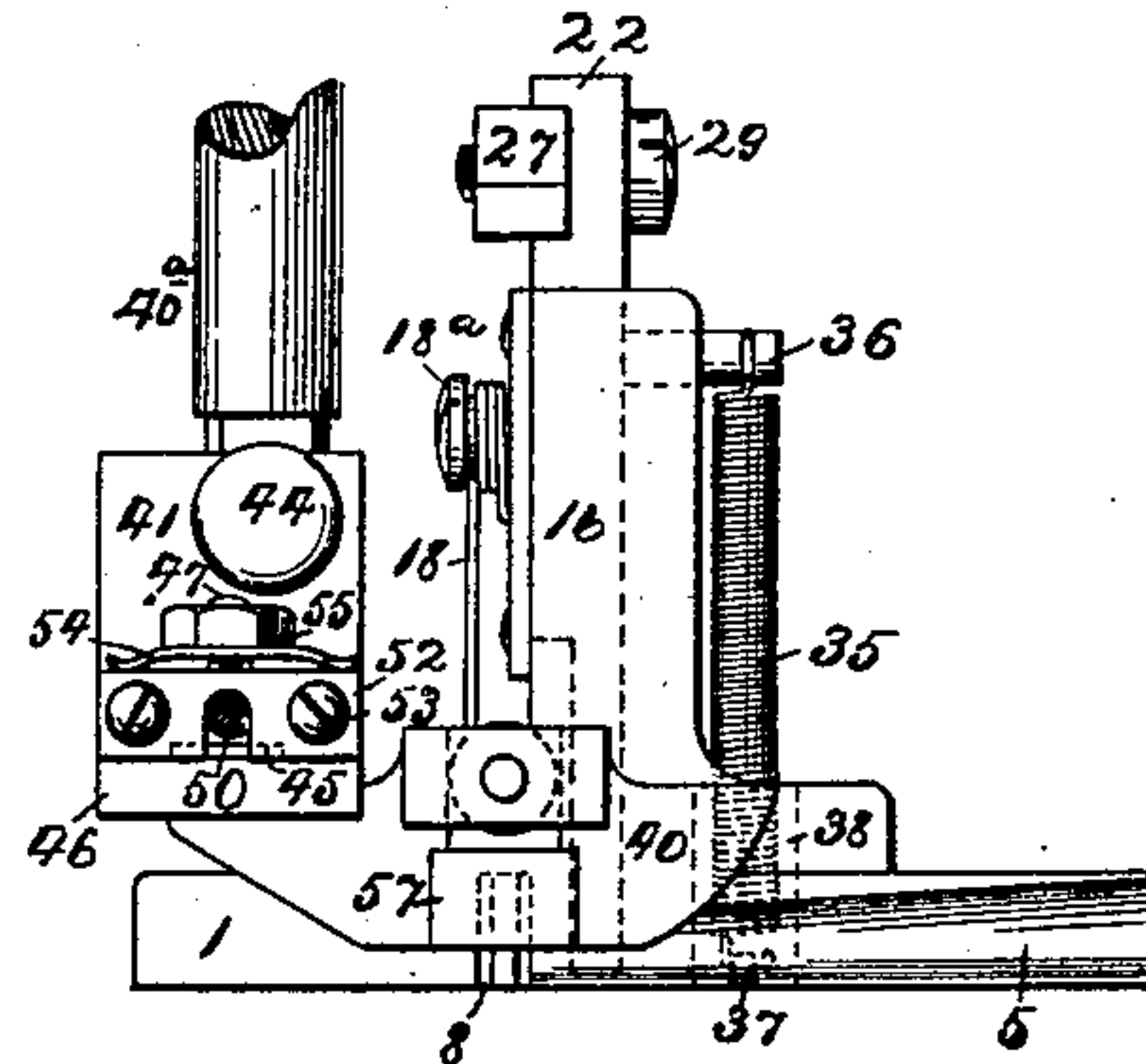


Fig. 3.

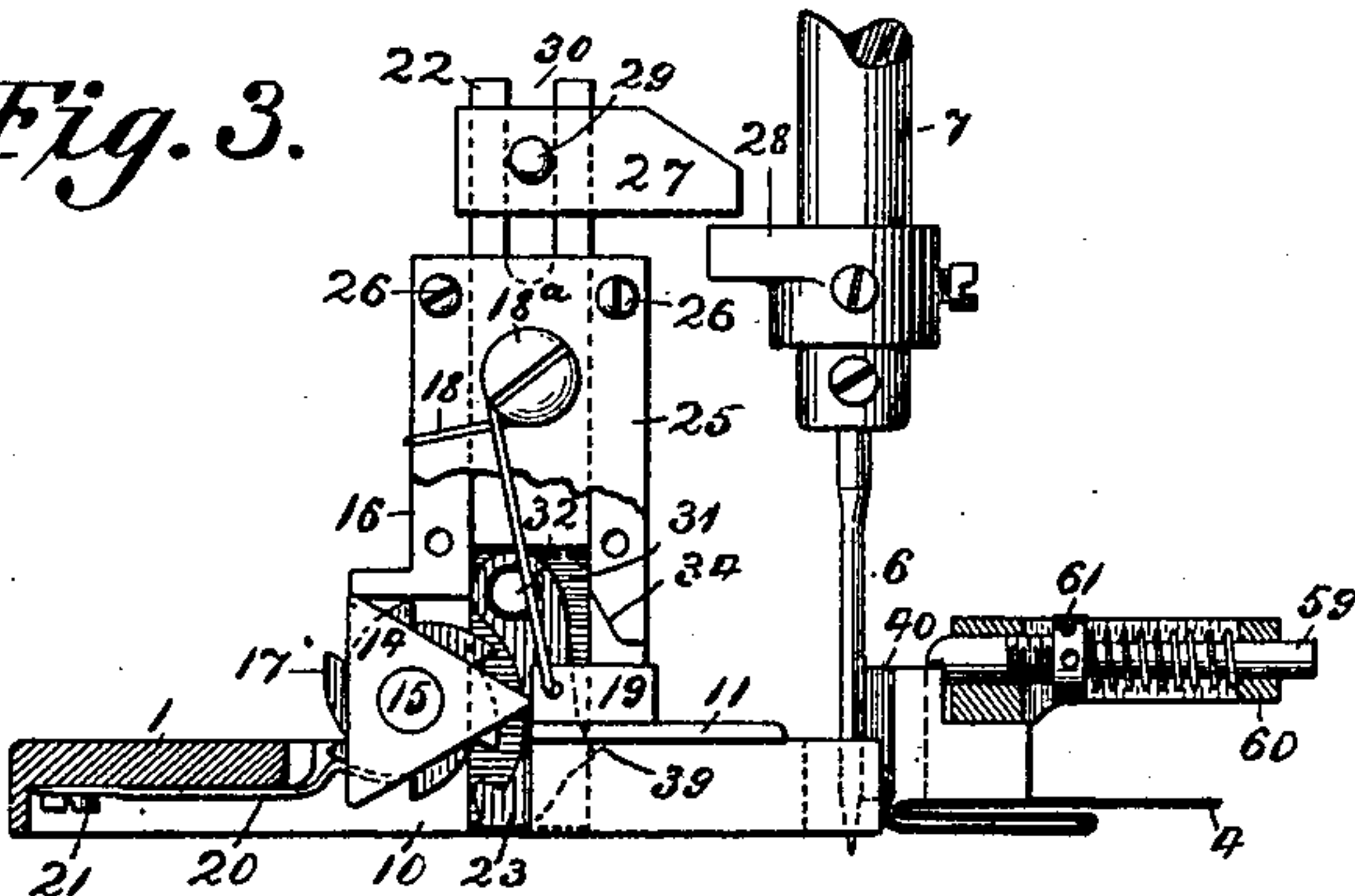


Fig. 5.

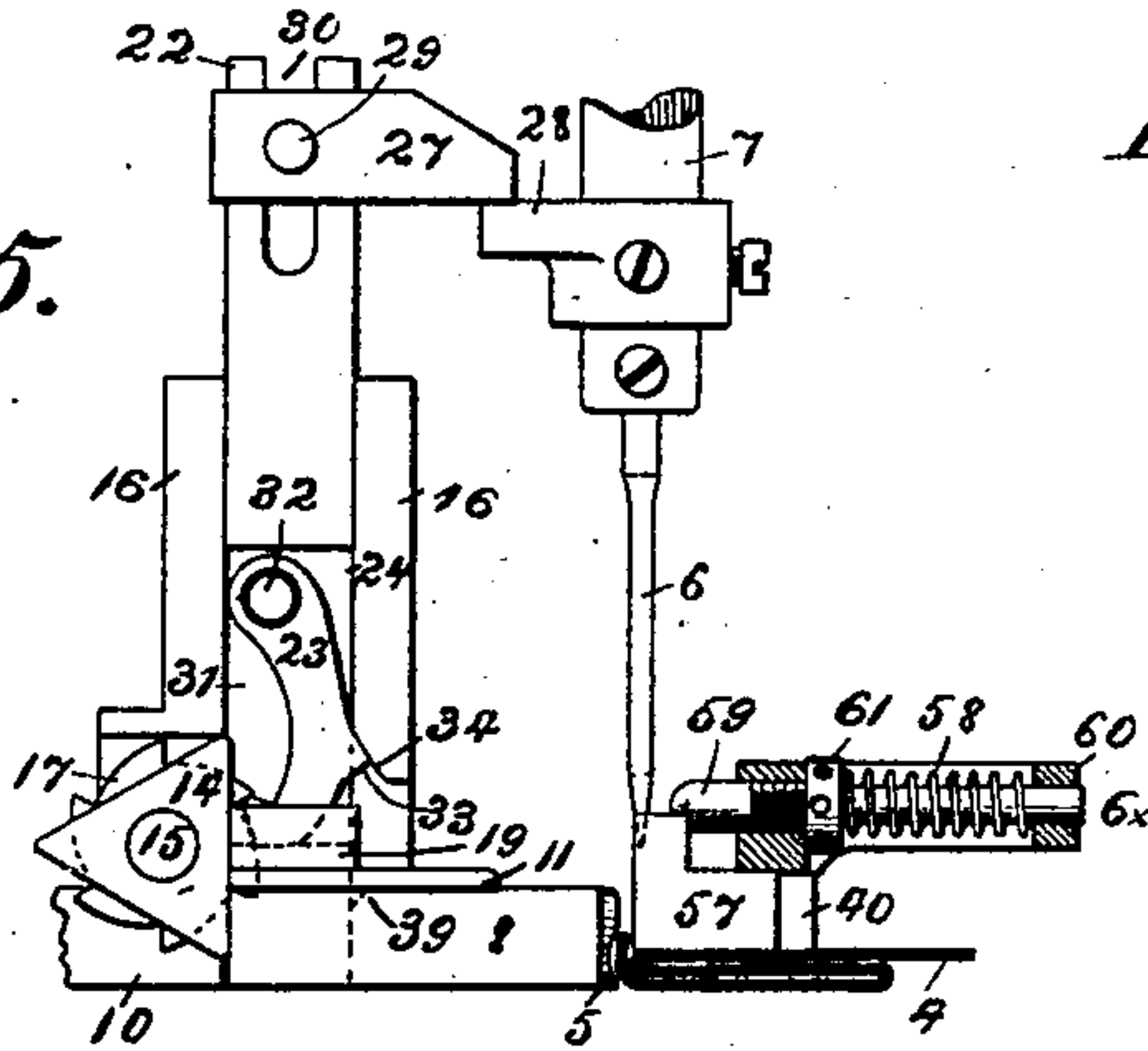
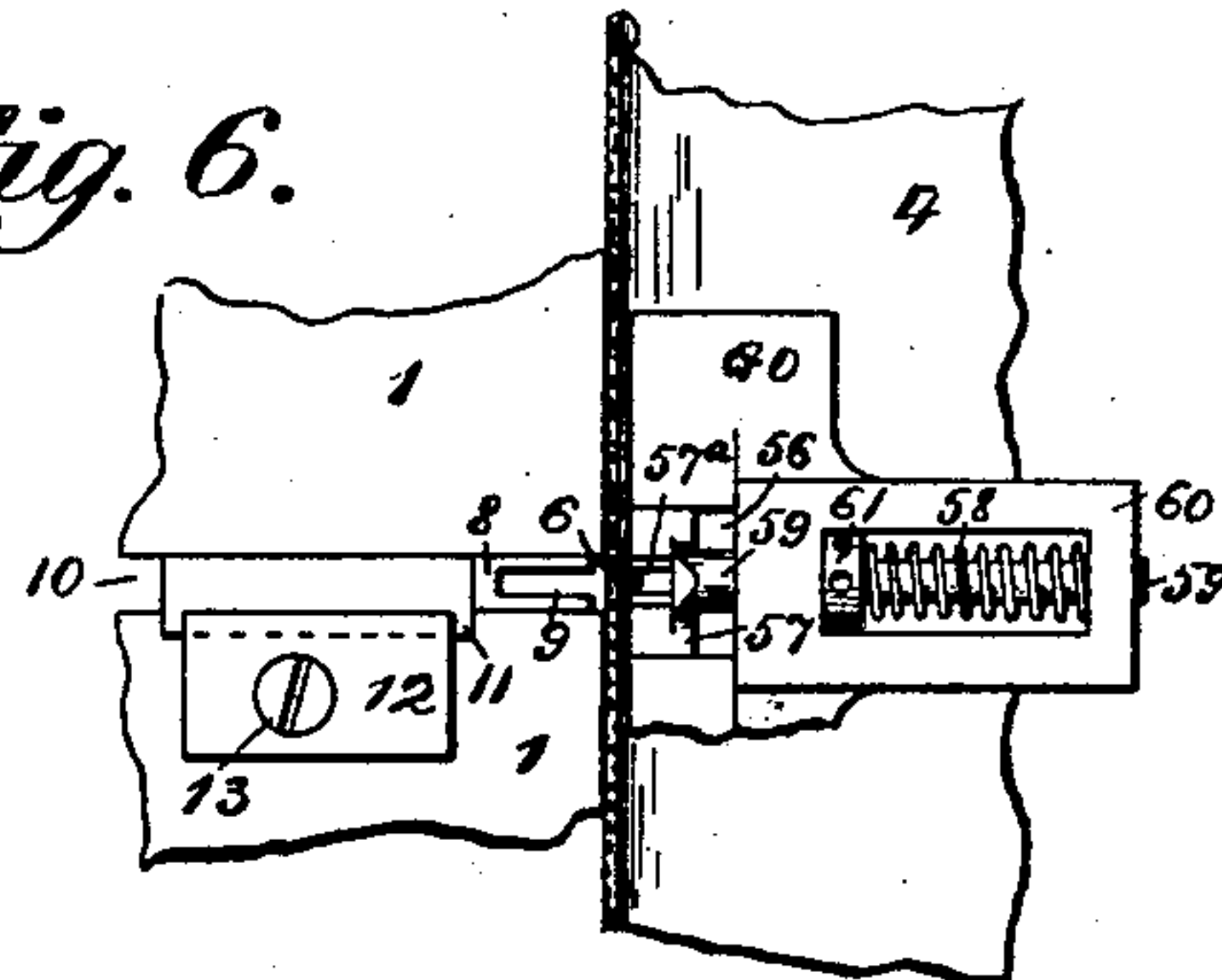


Fig. 6.



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OVERSEAMING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 678,877, dated July 23, 1901.

Application filed April 28, 1900. Serial No. 14,724. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. HESS, a citizen of the United States, and a resident of the borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Overseaming Attachments for Sewing-Machines, of which the following is a specification.

10 The present invention relates to zigzag stitching or overseaming sewing-machines or attachments.

One object of the invention is to produce an improved and simplified overseaming and blind-stitching mechanism, preferably in the form of an attachment which may be applied to existing machines made for plain stitching, and also to produce a mechanism having positive movements and insuring also positive lateral movements of the edge of the cloth, so that a superior grade of work may be produced at high speed.

Another object of the invention is to adjust the base-plate and the presser-foot independently of each other.

Other objects of the invention will hereinafter appear.

To these ends my invention consists in certain combinations of devices and features of construction, all as will be more fully hereinafter described, and particularly set forth in the concluding claims.

In the accompanying drawings, in which my invention is shown in the form of an attachment to be applied to existing machines, Figure 1 is a plan of the mechanism, showing the needle and the presser-foot bar in section and the edge of the goods as having been forced transversely by the pusher. Fig. 2 is a vertical section of the presser-foot carrier, illustrating the mode of effecting an adjustment of the presser-foot. Fig. 3 is a rear elevation, partly in section, of the mechanism, some of the parts being broken away and the pusher and its parts being illustrated in the same position as at Fig. 1. Fig. 4 is a side elevation of the mechanism. Fig. 5 is a view showing the plunger elevated and the parts in normal position. Fig. 6 is a partial plan view illustrating the edge of the goods as

having been returned to normal position, the pusher being also shown in normal position.

Throughout the several views similar parts are designated by similar numerals of reference.

A T-shaped base-plate 1 is adjustably secured upon the bed of the sewing-machine by a thumb-screw 2, which passes down through a slot 3 in the base-plate and engages a threaded hole provided in the machine-bed. The edge or edges of the fabric 4 feed along the work-face, being that side or edge of the base-plate which corresponds to the top of the T. This side or edge is grooved or fluted at 5 to assist in guiding the fabric as it feeds toward the needle, which latter is indicated at 6 and is fixed in a reciprocatory needle-bar 7; as usual.

A reciprocating pusher-bar 8, whose outer or working end is vertically slotted at 9 to fork or straddle the needle, pushes away the edge of the fabric at alternate strokes of the needle, so that the latter does not pass through the fabric, thereby producing a zigzag or overseaming stitch. This pusher slides horizontally in the outer portion of a long slot or horizontal guideway 10 formed in the base-plate and extending at right angles to its working edge. The bottom surface of the pusher slightly clears the upper surface of the machine-bed, so that its movements cannot be retarded by any inaccuracy in the formation of the latter; but said pusher is close enough to the bed to enable it to catch the edge of any thin material that may be placed in the machine. The body of the pusher is flush with the top surface of the base-plate and is provided with a lip or flange 11, which overhangs the upper edge of the slot 10. A keeper 12 is fastened upon the upper surface of the base-plate by a screw 13 and overlaps said flange to prevent the pusher from jumping. It will thus be seen that while the pusher is enabled to slide freely it is also properly retained in the slide-way. The outward movement of the pusher is effected by a three-sided rotatory cam 14, which is arranged vertically and in line with the pusher and engages the inner end of the latter. The cam is mounted upon a horizon-

tal stud 15, which extends laterally from the lower portion of an upright bracket or standard 16, fastened upon the base-plate. Placed between the side of the bracket and the said cam, but rigidly secured to the latter, is a gear or ratchet wheel 17, which has twice as many teeth as the cam has sides—that is, six. The ratchet-wheel and cam turn together through one-sixth of a revolution at each stroke of the needle-bar. The pusher is normally pressed against one of the sides of the cam by a spring 18, which is coiled about a shouldered screw 18^a, projecting from the side of the bracket 16, and one end of which catches over the side of said bracket, while the other end catches in a hole formed in a shoulder 19, extending upwardly from said pusher. Upon rotation of the cam the lower point thereof bears against the vertical inner face or end of the pusher and forces the same outwardly. During this movement said working point of the cam rides up along the edge of the pusher and of the shoulder 19 until said point reaches a dead-center, as illustrated at Fig. 3, so that the pusher is practically locked in its working position, since the spring 17 cannot move it back at this time. Upon the next movement of the ratchet and cam the said working point of the cam moves upwardly and inwardly out of working position, while the succeeding point swings into working position, said two points being then in the same vertical line and the intermediate side of the cam standing vertically, as at Fig. 5. During this movement the spring 17 moves the pusher inwardly until its inner edge is arrested by said vertical side of the cam. The ratchet-wheel is provided with a detent-spring 20, secured by a screw 21 to the under side of the base-plate. The purpose of this spring is to prevent accidental movement of the ratchet-wheel in either direction. The free end of the spring engages the abrupt faces of the ratchet-teeth, so as to positively lock the wheel against retrograde movement.

The rotation of the ratchet-wheel is effected intermittently by the needle-bar during the completion of the upstrokes of the latter through a vertically-movable plunger or slide-bar 22 and a pull-pawl 23, pivoted thereto. The body of the plunger is rectangular in cross-section and slides in a vertical guiding-groove or guideway 24, formed in the upright arm of the bracket 16. The plunger is confined in the groove by a side plate 25, which is fastened by screws 26 upon the bracket, so as to cover said groove. At its upper end the plunger carries a laterally-extending tappet 27, the under side of which engages with a screw or projection 28 on the needle-bar. The tappet is grooved to clasp the sides of the plunger and is secured thereto by a screw 29, which passes through a slot 30, provided in the upper end of the plunger, whereby the tappet may be adjusted vertically for needle-bars having different lengths of stroke or differently-placed projections 28.

The lower portion of the plunger is recessed at 31 to provide room for the pawl 23, which hangs from a lateral stud 32, projecting from the recessed portion of the plunger. The pawl is arranged in line with the ratchet-wheel and directly alongside of the pusher, the arrangement being such that the pusher, cam, ratchet-wheel, pawl, and plunger occupy very little space in the machine. The hooked end of the pawl stands normally in a position just below one of the ratchet-teeth, and as the plunger is lifted by the needle-bar the hook engages the tooth and rotates the ratchet-wheel. When the limit of the upward movement is reached, a shoulder or lug 33, provided upon the pawl, contacts with a suitably-inclined fixed lug or shoulder 34, formed by cutting away a portion of the side of the plunger-guideway, Figs. 3 to 5, and positively locks the pawl against further upward movement and the ratchet-wheel against overthrow, the back of the pawl tooth or hook being suitably formed to coact with the sloping edges of the ratchet-teeth for this purpose.

The downward movement of the plunger, which occurs during the like movement of the needle-bar, is effected by a helical spring 35, the upper end of which engages a lateral pin 36, provided upon the plunger, and the lower end of which catches upon a cross-pin 37, provided in the lower portion of the base-plate, the latter being vertically perforated at 38 to permit the entrance of the lower end of the spring. During the downward movement of the plunger the pawl slips over the succeeding ratchet-tooth and is positively guided to a position for engaging the latter by reason of the engagement of said shoulder 33 upon the pawl, with a fixed abutment 39 formed upon the base-plate and having a suitable inclination. By reason of the provision of the two abutments 34 and 39 and the shoulder 33 the machine may be run at high speed without danger of overthrow of the plunger or ratchet-wheel and cam and also without liability of failure of the pawl to properly engage the ratchet-teeth upon the upstroke.

It will be seen that the movement of the needle-bar is communicated to the pusher by a short train of mechanism, all of the parts of which are simply formed and have simple movements and ample wearing-surfaces, so that the machine may be operated at high speed without danger of becoming deranged or of rapidly wearing out.

The fabric passes beneath a presser-foot 40, which is arranged alongside of the working edge of the base-plate 1, so that the upturned edge of the goods may pass between the presser-foot and the base-plate. The presser-foot attachment comprises two portions, one portion of which is secured directly to the usual presser-foot bar 40^a of the sewing-machine and supports or carries the other. The carrier (designated as 41) is in the form

of an angle-block, the upright portion of which is grooved or slotted at 42 to fit over the presser-foot bar and also at 43 to receive the shank of a horizontal thumb-screw 44, by which the carrier is fastened to the bar. The slot 43 is narrower and shorter than the other and is provided to enable the carrier to be adjusted vertically upon the bar. The horizontal portion of the angular carrier 41 is grooved upon its under side at 45 to receive the correspondingly-grooved upper face of a horizontal plate 46, the latter being formed integrally with the presser-foot or rigidly secured thereto. By means of the plate and the groove in the carrier the presser-foot is enabled to slide in a direction at right angles to the direction of feed of the fabric. In order to control such sliding movement and effect fine adjustments of the presser-foot to accommodate different thicknesses of cloth, the plate 46 is provided with a vertical stud 47, which passes up through a slot 48, cut in the horizontally-extending portion of the carrier, said stud being provided about midway of its height with a threaded perforation, with which engages a horizontal thumb-screw 49, having a neck 50, which engages a recess 51, formed in a plate 52, the latter being secured by screws 53 to the end of the carrier and covering the end of the slot 48. By turning the screw 49 an adjustment of the presser-foot may be effected relatively to the carrier 41. A perforated spring friction-plate 54 is passed over the top of the stud 47 and bears upon the top surface of the horizontal portion of the carrier-block 41, partially covering the slot 48. The purpose of this plate is to prevent accidental movement of the presser-foot upon the carrier, and the amount of friction between the plate and the carrier-block that is needed for this purpose may be obtained by adjustment of a nut 55, which engages the threaded upper end of the stud 47 and bears down upon the spring-plate 54.

The presser-foot is recessed at 56 to permit the transverse movement of the edge of the fabric caused by the outward movement of the pusher 8. Working in this recess is a second pusher 57, which is vertically slotted at 57^a to afford a passage for the needle. This pusher stands in line with the pusher 8 and is forced back by the latter—that is to say, when the edge of the cloth is carried over by the pusher 8 the pusher 57 yields to permit the entrance of the cloth into the recess 56, as illustrated at Fig. 1. Upon the return movement of the pusher 8 the pusher 57 follows it and forces the edge of the cloth back to normal position, as illustrated at Fig. 6, the return movement of the pusher 57 being effected by a spring 58, which is coiled around a stem 59, formed integrally with or rigidly fixed to the pusher-head and at one end bears against the inner face of a frame or housing 60, which is horizontally perforated at both its ends to receive the said stem and permit a sliding movement thereof. The other end

of the spring bears against a nut 61, which engages the threaded base portion of the stem. This nut limits the return movement of the pusher by contacting with an inner face of the housing and is made adjustable, so as to enable the head of the pusher to set normally flush with the side face of the presser-foot. An adjustment of the nut may be effected by inserting a pin into holes formed in the periphery thereof. The bottom surface of the pusher 57 is substantially flush with the bottom surface of the presser-foot. The housing and stem are placed at an elevation, so as not to impede or interfere with the feeding of the goods. The presser-foot presses down on both sides of the needle, thereby holding the goods at each side of the pusher 57 and preventing the goods from being pushed out askew by the pusher 8.

In operation the base-plate is adjusted toward or from the needle by means of thumb-screw 2 and slot 3 to regulate the length of the stitch. The presser-foot may be independently adjusted, as desired, more space being left between the presser-foot and the base-plate when heavy fabric is to be stitched, so as to accommodate the extra thickness of the goods when the edge thereof is pushed out by the pusher 8. If two pieces of fabric are to be sewed together, they may be placed one above the other in the machine in the usual manner with their edges together. If work of the character of blind stitching or the like is to be done, the edge portion of the goods may be suitably folded—as, for instance, in the manner illustrated at Fig. 5—with the extreme edge upturned and feeding along between the working edge of the base-plate and the presser-foot.

Upon setting the sewing-machine in motion the needle passes through the slot 58 in the pusher 57 and through the three plies of the fabric in such a manner as to form a blind stitch. Upon the upstroke of the needle-bar and after the needle has been withdrawn from the fabric the contact 28 upon the bar engages the tappet 27, thereby lifting the plunger 22, together with the pawl 23. The latter engages the adjacent ratchet-tooth 17 and turns the ratchet-wheel, together with the cam 14, through one-sixth of a revolution. The spring 20 snaps over the edge of its ratchet-tooth and engages the next tooth. The lower point upon the cam forces the pusher 8 outwardly, said point working up along the vertical inner edge of the pusher. In its outward movement the pusher engages the raw or single edge of the fabric and forces it transversely, together with the folded edge, to the position illustrated at Figs. 1 and 3. As the edge of the fabric is pushed across it enters the recess 56 in the presser-foot, the pusher 57 yielding to permit the entrance of the fabric. At this time the needle-bar has reached the limit of its upstroke, and it will be understood that the longitudinal feed of the cloth takes place as usual. Upon the

succeeding downstroke of the needle-bar the plunger 22 is drawn down by the spring 35, and the pawl 23 slips past the succeeding ratchet-tooth, being then positively guided into position for subsequent engagement with said tooth by the fixed abutment 39, which engages the shoulder 33 upon the pawl for this purpose. At this time there is no movement of the ratchet wheel or cam, and retrograde movement of the pusher 8 is prevented because the working-point of the cam is at the dead-center, Fig. 3. During the completion of the downstroke of the needle-bar the needle passes down through the slot 9 in the pusher 8 and entirely outside of the edge of the fabric, so as to form an overseaming-stitch, Figs. 1 and 3. Upon the next upstroke of the needle-bar the plunger 22 is again lifted, and through the pawl 23 and the ratchet 17 the cam is turned one-sixth of a revolution to the non-working position shown at Fig. 5, thus permitting the spring 18 to return the pusher 8 to normal position, with its inner edge resting against the vertical edge or side of the cam. During the said return movement of the pusher 8 the spring 58 operates to return the pusher 57, whereby the upturned edge of the fabric is forced back to normal position. At about this time another longitudinal feed of the fabric occurs, and the cycle of operations is repeated until the seam is finished. Owing to the described transverse movements of the longitudinally-feeding fabric, the stitch formed is of a zigzag character and is adapted for a variety of work.

The provision of the return-pusher 57 is in many instances of much importance, as it insures that the edge of the cloth shall always be properly returned to normal position, and hence that the stitches shall be uniform in length and correctly placed, which is not always the case where the elasticity of the goods is wholly depended upon to return the edge to normal position. The natural spring of the cloth does not always cause it to move back with sufficient promptness to enable uniform stitches to be made at high speed. The provision of the independent adjustment for the presser-foot is also of importance, because it enables a variation to be made in the space between the working edge of the base-plate 1 and the working face of the pusher 57, (the latter being considered as in its pushed-back condition, as illustrated at Fig. 1,) so that different thicknesses of goods may be accommodated without changing the length of the stitch.

Many changes may be made in the construction and arrangement of the parts within the scope of the invention, and portions of my improvements may be used without others.

What I claim as new, and desire to secure by Letters Patent, is—

65 1. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a base-plate provided with a guideway, a

sliding pusher in proximity to the needle and arranged in said guideway so that it may reciprocate horizontally in a direction crosswise 70 of the travel of the fabric, a three-sided rotatory cam operatively connected to the needle-bar and directly engaging said pusher to reciprocate the same, and a spring for returning said pusher to normal position, said cam 75 being vertically arranged and placed in line with and behind said pusher and rotating upon a horizontal axis.

2. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, 80 of a base-plate provided with a guideway, a sliding spring-pressed pusher in proximity to the needle and arranged in said guideway so that it may reciprocate horizontally in a direction crosswise of the travel of the fabric, a 85 rotatory cam controlled by the needle-bar and directly engaging said spring-pressed pusher to reciprocate the same, a series of teeth provided upon said cam, a pawl operated by the needle-bar and engaging said teeth to inter- 90 mittently rotate the cam, and means for positively locking the cam against overthrow.

3. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, 95 of a base-plate provided with a guideway, a spring-pressed sliding pusher in proximity to the needle and arranged in said guideway so that it may reciprocate horizontally in a direction crosswise of the travel of the fabric, a 100 rotatory cam controlled by the needle-bar and directly engaging said spring-pressed pusher to reciprocate the same, a series of ratchet-teeth provided upon said cam, a pawl operated by the needle-bar and engaging said teeth to intermittently rotate the cam, and a fixed 105 abutment constructed to coact with said pawl to positively lock the ratchet-teeth against overthrow.

4. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, 110 of a base-plate provided with a guideway, a spring-pressed sliding pusher in proximity to the needle and arranged in said guideway so that it may reciprocate horizontally in a direction crosswise of the travel of the fabric, 115 a rotatory cam controlled by the needle-bar and directly engaging said spring-pressed pusher to reciprocate the same, a series of teeth provided upon said cam, a pawl operated by the needle-bar and engaging said 120 teeth to intermittently rotate the cam, and a fixed abutment arranged in the path of a shoulder formed upon the pawl and constructed to engage therewith at the completion of the working stroke of the pawl to prevent vibration of the pawl and hence lock 125 the ratchet-wheel and cam against overthrow.

5. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, 130 of a base-plate provided with a guideway, a spring-pressed sliding pusher in proximity to the needle and arranged in said guideway so that it may reciprocate horizontally in a direction crosswise of the travel of the fabric,

a rotatory cam controlled by the needle-bar and directly engaging said spring-pressed pusher, a series of ratchet-teeth provided upon said cam, a pawl reciprocated by the needle-bar, a fixed abutment arranged to guide the pawl into position for engaging said ratchet-teeth, and a second fixed abutment constructed to coact with said pawl to lock the ratchet-teeth against overthrow.

6. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a base-plate provided with a guideway, a sliding pusher in proximity to the needle and arranged in said guideway so that it may reciprocate horizontally in a direction crosswise of the travel of the fabric, a rotatory cam directly engaging said pusher, said cam being vertically arranged and placed in line with and behind said pusher, a ratchet-wheel arranged alongside of said cam and secured thereto, a pawl arranged in line with said ratchet-wheel, a vertical plunger to which said pawl is pivoted, and means upon said plunger for engaging the needle-bar.

7. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a vertically-sliding plunger arranged parallel with said needle-bar, means for enabling the needle-bar to engage said plunger, and a horizontally and laterally moving pusher operatively connected to said plunger and arranged in proximity to the needle.

8. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a base-plate, a bracket erected thereon, a vertically-sliding plunger guided in said bracket, means for enabling the needle-bar to engage said plunger, a rotatory device operated by said plunger, and a pusher operated by said rotatory device.

9. In a sewing-machine, the combination with a needle, and a reciprocatory needle-bar, of a base-plate, a bracket erected thereon, a vertically-sliding spring-retained plunger guided in said bracket, means for enabling the needle-bar to engage said plunger, a pawl pivoted to said plunger, a ratchet-wheel operated by said pawl, a cam secured to said ratchet-wheel, and a pusher operated by said cam.

10. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a base-plate, a bracket erected thereon, a vertical groove formed in said bracket, a sliding plunger working in said groove, a plate overlying said groove, a pawl pivoted to said plunger, a ratchet-wheel operated by said pawl, a cam connected to said ratchet-wheel, and a pusher engaged by said cam.

11. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a vertically-sliding plunger, a tappet adjustable on said plunger and arranged to be engaged by a projecting part of the needle-bar, and a device operated by said plunger and arranged in proximity to the needle and con-

structed to push the edge of the fabric transversely of its travel.

12. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a vertically-sliding plunger, means for enabling the needle-bar to engage said plunger, a locking pull-pawl carried by said plunger, a vertically-arranged ratchet-wheel having six teeth, a triangular cam connected to said ratchet-wheel, and a horizontally-guided pusher directly engaged by said cam and arranged in proximity to the needle.

13. An overseaming mechanism for sewing-machines, comprising a ratchet-wheel, a pawl operatively connected to the needle-bar, a triangular cam, an abutment for guiding said pawl into engagement with the ratchet-wheel, means for positively locking the ratchet-wheel against overthrow, and a pusher reciprocated by means of said ratchet-wheel and cam.

14. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a base-plate carrying a pusher arranged in proximity to and on one side of the needle, said pusher being operatively connected to the needle-bar and constructed to reciprocate in the base-plate horizontally and intermittently project therefrom to move the edges of the fabric in a direction crosswise of the direction of their feed, and a presser-foot movable and adjustable horizontally toward and away from the base-plate and from the edges of the fabric to accommodate different thicknesses of goods.

15. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a base-plate, a pusher carried thereby and arranged in proximity to the needle, said pusher being operatively connected to the needle-bar and constructed to reciprocate horizontally in a direction crosswise of the travel of the fabric, and said base-plate being adjustable toward and away from the needle to vary the length of the stitch, and a presser-foot adjustable toward and from the base-plate to accommodate different thicknesses of goods.

16. An overseaming mechanism for sewing-machines, comprising a base-plate, provided with a work-face, on one side of the needle, a pusher carried by said base-plate and arranged in proximity to the needle, said pusher being operatively connected to the needle-bar and constructed to project intermittently from the base-plate horizontally in a direction crosswise of the travel of the fabric, and a presser-foot carried by the presser-foot bar of the sewing-machine and movable and adjustable horizontally toward or away from the work-face of said base-plate.

17. In a sewing-machine, the combination with a needle and a reciprocatory needle-bar, of a horizontal base-plate, a slot cut vertically therein, a pusher arranged to slide horizontally in said slot and provided with a lip or

flange which overhangs the upper edge of the slot, and a keeper fastened upon the upper face of the base-plate and overlapping said lip.

18. A mechanism for making a zigzag or overseaming stitch, comprising, in combination, a pusher for moving the edge of the goods transversely to the path of the travel thereof at a point in proximity to the needle, and a second pusher for moving said edge in the opposite direction, both of said pushers being vertically slotted for the needle at their adjoining ends.

19. A mechanism for making a zigzag or overseaming stitch, comprising, in combination, a pusher for moving the edge of the goods transversely to the path of the travel thereof at a point in proximity to the needle, a presser-foot, and a second pusher carried by said presser-foot.

20. A mechanism for making a zigzag or overseaming stitch, comprising, in combination, a pusher for moving the edge of the goods transversely to the path of the travel thereof at a point in proximity to the needle, a presser-foot, and a spring-pressed pusher carried by said presser-foot.

21. A mechanism for making a zigzag or overseaming stitch, comprising, in combination, a pusher for moving the edge of the goods transversely to the path of the travel thereof at a point in proximity to the needle, a presser-foot, and a spring-pressed sliding pusher carried by said presser-foot.

22. A mechanism for making a zigzag or overseaming stitch, comprising, in combination, a pusher for moving the edge of the goods transversely to the path of the travel thereof at a point in proximity to the needle, a presser-foot, a slot formed in the working face of said presser-foot, and a spring-pressed pusher working in said slot and flush with said working face.

23. A mechanism for making a zigzag or overseaming stitch, comprising, in combination, a pusher for moving the edge of the goods transversely to the path of the travel thereof at a point in proximity to the needle, a presser-foot, a slot formed in the working face of said presser-foot, a pusher working in said slot and flush with said working face and having a horizontal guide-stem, and a spring surrounding said guide-stem.

24. A mechanism for making zigzag or overseaming stitches, comprising, in combination, a vertically-movable plunger, a pawl, a ratchet-wheel, a cam, a pusher, a presser-foot, and a second returning-pusher.

25. A mechanism for making zigzag or overseaming stitches, comprising, in combination, a base-plate, a guide-bracket erected thereon, a vertically-movable plunger guided in said bracket, a pawl carried by said plunger, a cam operated by said pawl, a sliding spring-pressed plunger operated by means of said cam, a presser-foot adjustable toward or away

from said base-plate, and a spring-pressed pusher carried by said presser-foot.

26. A mechanism for making zigzag or overseaming stitches, comprising, in combination, a base-plate, a guide-bracket erected thereon, a vertically-movable plunger guided in said bracket, a pawl carried by said plunger, a cam operated by said pawl, a sliding spring-pressed pusher operated by means of said cam, a presser-foot provided with means for attachment to the presser-foot bar of a sewing-machine and adjustable toward and away from said base-plate, and a spring-pressed sliding pusher carried by said presser-foot.

27. In a sewing-machine attachment, a base-plate provided with a guideway, a pusher-bar movable in said guideway, a standard mounted on said base-plate and provided with a guideway, a slide-bar movable in the guideway of the standard, and adapted to be reciprocated by the needle-bar of a sewing-machine, and mechanism for conveying motion from said slide-bar to said pusher-bar to reciprocate the latter.

28. In a sewing-machine attachment, a base-plate provided with a horizontal guideway, a pusher-bar movable in said horizontal guideway, a standard mounted on said base-plate and provided with a vertical guideway, a slide-bar movable in said vertical guideway and adapted to be reciprocated by the needle-bar of a sewing-machine, a spring normally pressing said slide-bar downward, and mechanism for conveying motion from said slide-bar to said pusher-bar to reciprocate the latter.

29. In a sewing-machine attachment, a base-plate provided with a guideway, a pusher-bar movable in said guideway, a standard mounted on said base-plate and provided with a guideway, a slide-bar movable in the guideway of the standard and adapted to be reciprocated by the needle-bar of a sewing-machine, a cam engaging with said pusher-bar for reciprocating the same, and mechanism for conveying motion from said slide-bar to said cam for rotating the latter.

30. In a sewing-machine attachment, a base-plate provided with a horizontal guideway, a pusher-bar movable in said horizontal guideway, a standard mounted on said base-plate and provided with a vertical guideway, a slide-bar movable in said vertical guideway and adapted to be reciprocated by the needle-bar of a sewing-machine, a spring pressing said slide-bar downward, a cam engaging with said pusher-bar for reciprocating the latter, and mechanism for conveying motion from said slide-bar to said cam to rotate the latter.

31. In a sewing-machine attachment a base-plate provided with a guideway, a pusher-bar movable in said guideway, a standard mounted on said base-plate and provided with a guideway, a slide-bar movable in the guideway of the standard and adapted to be reciprocated by the needle-bar of a sewing-machine, a spring pressing said slide-bar downward, a cam engaging with said pusher-bar for reciprocating the latter, and mechanism for conveying motion from said slide-bar to said cam to rotate the latter.

roccated by the needle-bar of a sewing-machine, a cam engaging with said pusher-bar to reciprocate the same, a gear for rotating said cam, and a pawl carried by said slide-bar for rotating said gear.

32. In a sewing-machine, a presser-foot, in combination with an attachment having a base-plate provided with a guideway, a pusher-bar movable in said guideway, a standard mounted on said base-plate and provided with a guideway, a slide-bar movable in the guideway of the standard and adapted to be reciprocated by the needle-bar of a sewing-machine, and mechanism for conveying motion from said slide-bar to said pusher-bar to reciprocate the latter.

33. In a sewing-machine a presser-foot in combination with an attachment having a base-plate provided with a guideway a pusher-bar movable in said guideway, a standard mounted on said base-plate and provided with a guideway, a slide-bar movable in the guideway of the standard and adapted to be reciprocated by the needle-bar of a sewing-machine,

a cam engaging said pusher-bar for reciprocating the same, and mechanism for conveying motion from said slide-bar to said cam for rotating the latter.

34. In a sewing-machine a presser-foot in combination with an attachment having a base-plate provided with a guideway, a pusher-bar movable in said guideway, a standard mounted on said base-plate and provided with a guideway, a slide-bar movable in the guideway of the standard and adapted to be reciprocated by the needle-bar of a sewing-machine, a cam engaging with said pusher-bar to reciprocate the same, a gear for rotating said cam, and a pawl carried by said slide-bar for rotating the gear.

Signed at the borough of Manhattan, city of New York, in the county of New York and State of New York, this 27th day of April, A. D. 1900.

EDWARD B. HESS.

Witnesses:

K. V. DONOVAN,
FLORENCE KEELING.