

No. 652,079.

Patented June 19, 1900.

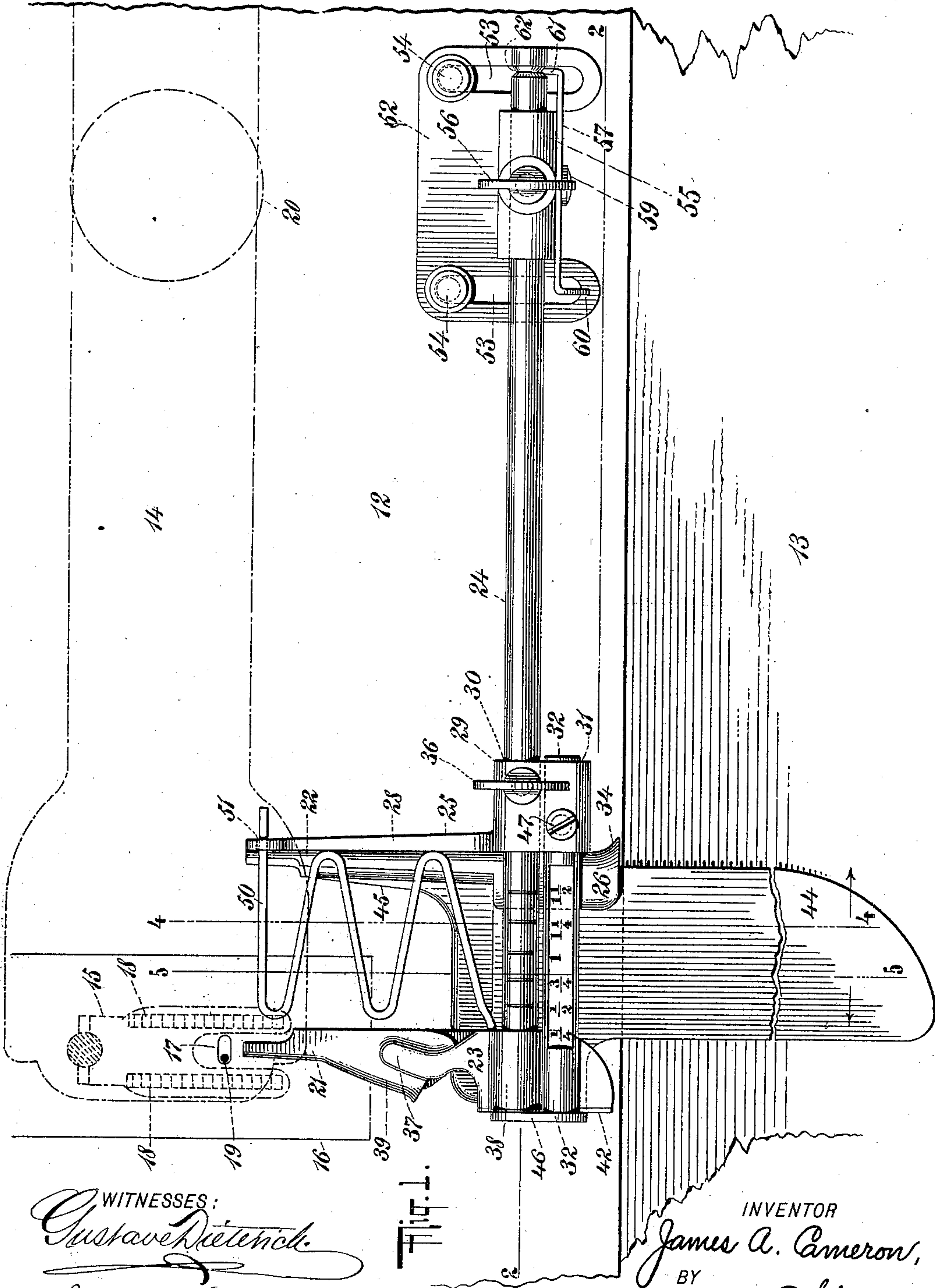
J. A. CAMERON.

HEMMER ATTACHMENT FOR SEWING MACHINES.

(Application filed Aug. 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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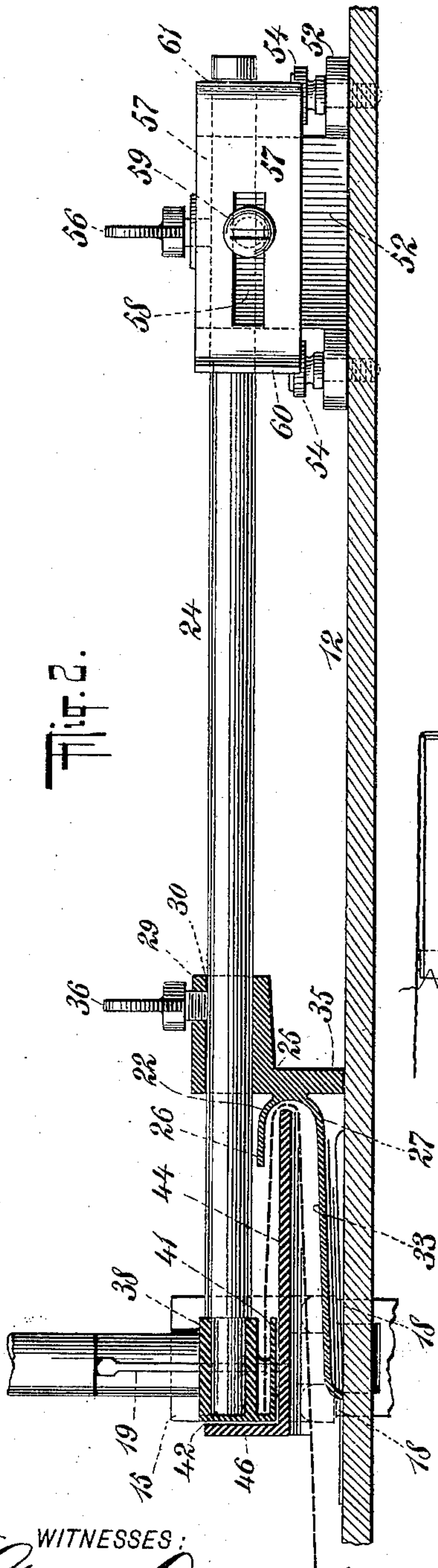


Fig. 2.

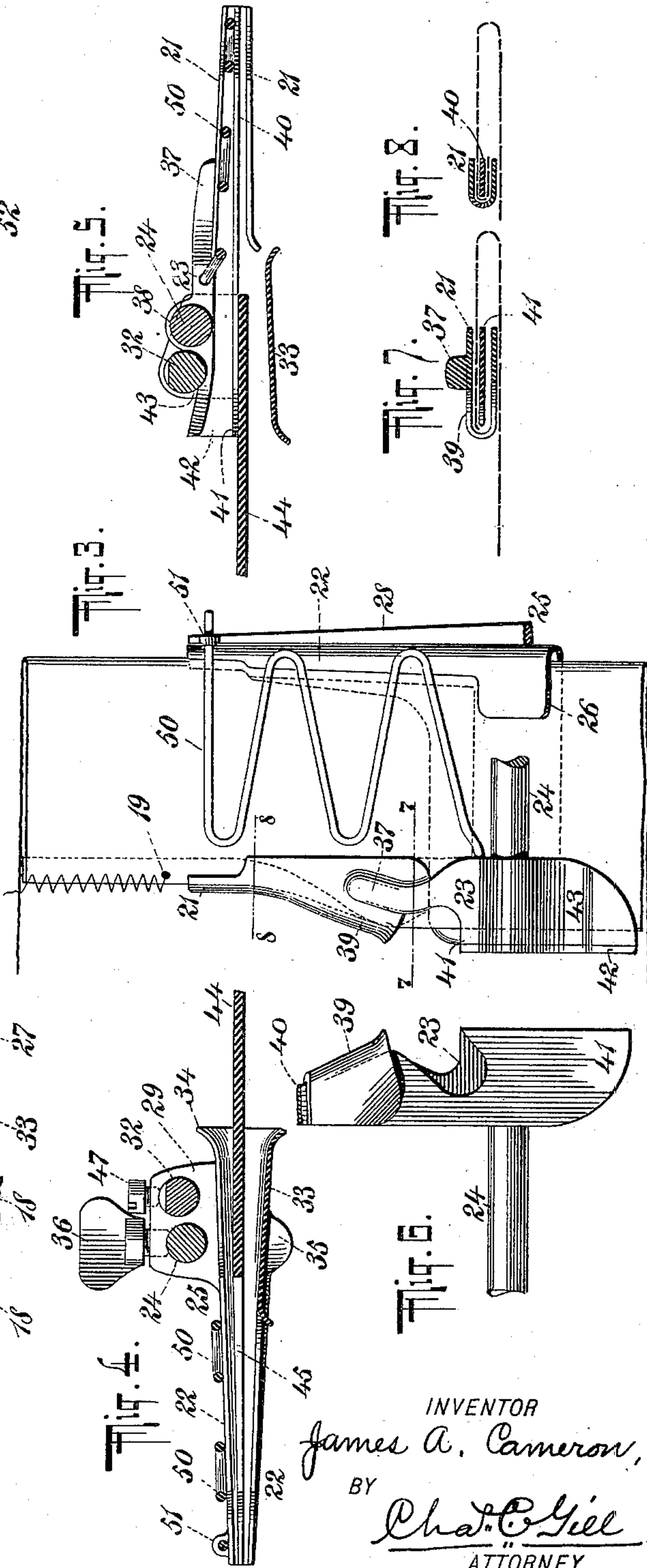


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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HEMMER ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 652,079, dated June 19, 1900.

Application filed August-10, 1899. Serial No. 726,734. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. CAMERON, a citizen of the United States, and a resident of New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Hemmer Attachments for Sewing-Machines, of which the following is a specification.

The invention relates to improvements in hemmer attachments for sewing-machines, and particularly to hemmers for use in making hemstitched handkerchiefs.

The invention consists in the novel features and combinations of parts hereinafter described, and particularly pointed out in the claims.

The object of the invention is to improve the construction, increase the efficiency and certainty of correct operation, and attain greater convenience in the use of handkerchief-hemmers.

The hemmer of my invention comprises two guides for the edges of the hem, the outer guide, or the one guiding the one edge of the hem to the needle, being rigidly secured to a rod which is in the nature of a carriage, and the other guide being adjustable on said rod toward or from the said outer guide, said guides and their connected parts being of special construction and employed in connection with a tongue or feed-plate, around which the hem of the fabric is folded, and also with a frame, preferably of wire and slightly yielding, intermediate the two guides to prevent the hem portion of the fabric from buckling up during the inward or forward feed of said fabric.

The means I provide for mounting the hemmer upon the machine and enabling an ordinary operative to remove or shift the hemmer and then reestablish the same without any special exercise of individual judgment into accurate relation with the path of the needle I regard as of special importance and novel in this art.

The invention will be fully understood from the detailed description presented, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of a portion of a sewing-machine equipped with a hemmer constructed in accordance with and embodying the invention, the upper arm of the sewing-

machine head being indicated by dotted lines. Fig. 2 is a vertical longitudinal section of same on the dotted line 2 2 of Fig. 1, the position of the fabric to be sewed being indicated by dotted lines. Fig. 3 is a top view of a portion of the hemmer and illustrates a portion of a handkerchief in position to have its edge folded and its hem stitched. Fig. 4 is a vertical section of same on the dotted line 4 4 of Fig. 1. Fig. 5 is a vertical section of same on the dotted line 5 5 of Fig. 1 looking to the left in the direction of the arrow. Fig. 6 is a detached bottom view of a portion of the edge-folder and connected parts. Fig. 7 is a vertical section of same on the dotted line 7 7 of Fig. 3, and Fig. 8 is a like section of same on the dotted line 8 8 of Fig. 3.

In the drawings, 12 denotes the usual bed-plate of a customary sewing-machine head, and 13 a portion of the supporting-table thereof. The upper arm of the sewing-machine head is numbered 14 and indicated by dotted lines. The sewing-machine head will carry the usual presser-foot 15, and the bed 12 of said head will be provided with the customary throat-plate 16, having an elongated opening 17 for the needle, said opening 17 being intermediate the feed-dogs 18 18 and also intermediate the arms of the bifurcated presser-foot 15, as denoted by the dotted lines in Fig. 1. The machine illustrated is adapted to operate a vibrating needle 19, by which the sewing is to be performed, and hence the needle-opening 17 is elongated in a longitudinal direction. The dotted circle 20 in Fig. 1 designates the customary position for the usual name-plate ordinarily applied upon the bed-plate 12.

The guides for the edges of the hem are numbered 21 and 22, respectively, the guide 21 being secured to the casting 23, which is rigidly fixed upon the left-hand end of the main supporting-rod 24, while the guide 22 is rigidly secured to the casting 25, adjustably mounted upon the said rod 24. The guide 22 is formed by folding a piece of sheet metal over upon itself, so as to create the upper portion or lip 26 and the lower portion 27, as more clearly illustrated in Fig. 2. The longitudinal outer edge of the guide 22 defines a straight line, and said edge is secured to the forwardly-extending arm 28 of the aforesaid casting 25, said arm 28 extending

forwardly from and on a lower plane than that portion numbered 29 of the casting 25, and which portion 29 is formed with the bearing-apertures 30 and 31, through which pass the aforesaid rod 24 and rod 32, respectively. The lower portion 27 of the guide 22 is formed with the plate 33, extending toward the guide 21, as shown in Fig. 2, and over this plate 33 the main body of the handkerchief or other fabric will be fed, as denoted by the dotted lines in Fig. 2. At the entering edges of the guide 22 the said guide will be flared upwardly, as denoted at 34, in order to facilitate the feeding of the fabric. The casting 25 in line with the plate 33 and preferably below the rod 24 will be formed with a downwardly-extending stud 35, (clearly shown in Figs. 2 and 4,) which will operate as a support for the main portion of the attachment, said stud 35 when the attachment is in use having its bearing upon the upper surface of the bed-plate 12. The guide 22 is therefore formed with the plate 33 and is carried by the casting or frame 25, which is mounted upon the rod 24, being adjustable upon said rod 24 and adapted to be secured in any of its adjusted positions by means of the thumb-screw 36. The guide 21, as hereinbefore described, is rigidly connected with the left-hand end of the rod 24, and therefore is not adjustable upon said rod. The guide 21 will preferably be formed of sheet metal and secured to the forwardly-extending finger or arm 37 of the casting or frame 23, which casting or frame 23 is formed with the sleeve 38, rigidly secured upon the inner end of the rod 24. The outer portion of the guide 21 constitutes a folder, as indicated at 39, for turning over the edge of the fabric on the line on which the hem is to be sewed. Within the guide 21, or combined guide and folder 21 39, is arranged the finger 40, which is formed of the forwardly-extending portion of the plate 41, disposed below the casting 23 and having one edge 42 turned upward and secured to the left-hand edges of said casting or frame 23, whereby an inclosed space is formed intermediate the lower surface of the casting or frame 23 and the said plate 41 and through which the edge of the fabric to be folded by the coöperation of the folder 39 and inclosed finger 40 may be fed. The outer portion of the casting 23 flares upwardly, and thereby forms a concave seat 43 at its upper surface and an enlarged entering-mouth through which the fabric may be fed. Thus at the inner or left-hand end of the rod 24 is rigidly secured the casting or frame 23, to whose forwardly-projecting finger or arm 37 is secured the combined guide 21 and folder 39 and to whose outer edges is fastened the plate 41, whose forwardly-projecting portion constitutes the finger 40, passing through the folder 39 and guide 21. Intermediate the guides 21 and 22, both of which are carried upon the rod 24, is placed the tongue 44, which extends outwardly toward the opera-

tive over the table 13 and at its forward right-hand edge is formed with the finger 45, which is disposed within the guide 22 and over which the outer portion of the hem of the fabric passes or folds. The tongue 44 has at the left-hand edge of its forward portion the upwardly-extending lug 46, to which is rigidly secured the rod 32, and said rod 32 extends from said lug 46 toward the right and enters the bearing-aperture 31, formed in the casting 25, wherein the right-hand end of said rod 32 may be firmly secured by means of a screw 47. The rod 32 at its left-hand end passes within the concave seat 43, formed in the casting or frame 23, and is guided within said concave recess 43, which substantially acts as a bearing for the left-hand portion of said rod 32. The tongue 44 when in position is above the plate 33, formed as a portion of the guide 22, and is below the plate 41, fastened to the casting or frame 23, which carries the guide 21. The attachment proper is thus formed of three main groups of parts, each group being connected together and the three groups being supported by the rod 24. The first of these groups consists of the casting or frame 23, secured upon the left-hand end of the rod 24, the combined guide and folder 21 39, connected to the said casting or frame 23, and the plate 41, connected to said casting or frame 23 and comprising the finger 40, which passes within the guide 21. The second of these groups comprises the guide 22 and the casting 25, carrying said guide and mounted upon the rod 24, and the third of said groups comprises the tongue 44, finger 45, and rod 32, the latter passing upon the casting or frame 23 and being removably secured within the casting 25 by means of the screw 47.

In addition to the aforesaid main groups of parts the attachment also comprises the wire frame 50, which will preferably be secured at one end to the casting or frame 23 and at the other end be freely passed through an eye 51, formed at the forward end of the arm 28, constituting a part of the casting or frame 25. The wire frame 50 will preferably be formed of a single rod of wire bent into serpentine form, the folds of the wire being intermediate the guides 21 and 22 and in position to prevent puckering of the hem of the fabric, said hem being compelled to feed inwardly below said frame 50 and being, in effect, constantly ironed out by means of said frame. The frame 50 is of great importance in accomplishing the proper sewing of the fabric, since thereby the hem portion of the fabric is kept in smooth condition and prevented from drawing its edge away from the true line of the sewing. When the frame 50 is given a serpentine form, the folds of the rod of wire being on inclined lines, the effectiveness of the frame 50 is greatly increased, and hence in so far as the frame 50 is concerned I desire to claim, broadly, the combination of said frame in the attachment

without regard to its special formation and also the special form illustrated of said frame.

The attachment of the hemmer to the sewing-machine is through the medium of the rod 24, in connection with the bracket 52, which bracket is provided with the elongated slots 53 to receive the screws 54, and is also provided with the elevated bearing-sleeve 55, through which the rod 24 passes and within which said rod 24 may be rigidly secured by means of the thumb-screw 56. The slots 53 and screws 54 permit of the adjustment of the bracket 52 with respect to the special conditions to be met in the various classes of sewing-machines and the character of the work to be performed as well as with respect to the nature of the material or fabric to be sewed, and the bearing-sleeve 55, in connection with the thumb-screw 56, permits of the adjustment of the rod 24 in order that the guide 21 may receive the most appropriate adjustment possible with respect to the needle-opening 17 in the throat-plate 16. Upon one side of the bracket 52 is provided the spring-plate 57, having an elongated slot 58 (see Fig. 2) to receive the screw 59, the said slot permitting of the adjustment of said spring-plate 57 longitudinally along the side of said bracket and said screw 59 being provided to secure the plate 57 in any of its adjusted positions. The left-hand end of the spring-plate 57 is formed with the outwardly-extending flange 60, and the right-hand end of said spring-plate 57 is formed with the inwardly or forwardly projecting flange 61, the latter being adapted to enter into engagement with the annular groove 62, formed in the end of the rod 24, as more clearly indicated in Fig. 1. The outwardly-extending flange 60 at the left-hand end of the spring-plate 57 is provided simply for convenience in moving or adjusting said plate along the side of the bracket 52, said flange 60 forming a thumb-piece which may be readily grasped when it is desired to move the plate 57. The spring-plate 57, having the flange 61 to engage the annular groove 62 of the rod 24, is of great importance in this art, since by reason thereof, after the attachment has been once adjusted by the expert with relation to the needle-opening 17, the said attachment may then be withdrawn from the machine and reapplied thereto by the usual operator without requiring the attendance of the expert for again effecting the proper adjustment of the parts. For illustration, the expert will adjust the rod 24 within the bearing-sleeve 55 until the guide 21 is in proper alinement with the needle-opening 17 to permit of the proper formation of the hem, and thereupon the expert will tighten the thumb-screw 56, so as to bind the rod 24 in rigid position, after which the expert will adjust the spring-plate 57 until the flange 61 is within the groove 62 of the said rod 24, and thereupon he may tighten the screw 59 in order to secure the plate 57 in rigid position. If thereafter, due to accident

or otherwise, it should become necessary for the operative to take the attachment from the machine and to a mechanic for attention, the operative will simply loosen the thumb-screw 56 and (without detaching the spring-plate 57) withdraw the rod 24 from the bearing-sleeve 55 of the bracket 52. The operative upon again applying the attachment to the machine will simply be required to pass the rod 24 through the bearing-sleeve 55 of the bracket 52 until the flange 61 of the plate 57 snaps into the groove 62 of said rod 24, and thereupon she will tighten the thumb-screw 56, so as to bind upon the said rod 24. After the first adjustment by the expert the spring-plate 57 will govern the further applications of the attachment to the machine, since, the parts having been once adjusted, their reapplication to the machine will become purely formal, since as soon as the flange 61 of the plate 57 snaps into the groove 62 of the rod 24 the guide 21 will then have reached its proper position with respect to the needle-opening 17. In the absence of the spring-plate 57 or some equivalent means the attachment would require adjustment with respect to the needle-opening 17 every time it might be applied to the machine, and since this adjustment can rarely be trusted to operatives, but requires the skill of the expert, it will be apparent that the employment of the spring-plate 57 or some equivalent device is of great benefit, since thereby the time of the expert is saved and the operative is enabled to always place the guide 21 in proper relation to the needle-opening 17. The attachment may be adjusted toward or from the needle-opening 17 by reason of the slots 53, provided within the supporting-bracket 52.

When the attachment is in position upon the sewing-machine, it is practically supported by the bracket 52 and the stud 35, formed at the lower side of the casting or frame 25.

The character of the work performed with the use of the attachment made the subject hereof is shown in Fig. 3, in which the operation of hemstitching a handkerchief is illustrated. It is desirable that hems differing in width shall be from time to time produced upon the handkerchiefs or other fabrics, and therefore the guide 22, carried by the casting 25, is rendered adjustable upon the rod 24. The casting 25 may be moved upon the rod 24 toward or from the fixed guide 21 and be secured in any desired position by tightening the thumb-screw 36. During the adjustment of the guide 22 toward or from the fixed guide 21 the outer end of the wire frame 50 will freely slide through the eye 51, formed on the casting or frame 25, and thus the frame 50 will not interfere with the ready adjustment of the guide 22. It is to be especially observed that the adjustment of the guide 22 in no manner disturbs the relation of the rod 24 with the fixed guide 21 nor the relation of the fixed guide 21 with the needle-opening 17, and this also is a feature of importance, since

it is highly desirable that the guide 21 shall remain fixed with relation to the needle-opening 17. As an index to the adjustment of the guide 22 I provide upon the rod 24 intermediate the two guides certain lines indicating quarter-inches, and upon the flattened upper surface of the rod 32 I indicate by numerals quarter-inches. The operative, knowing what width of hem is desired, will loosen the screw 36 and move the guide 22 toward or from the fixed guide 21, so as to regulate the width of hem, paying no attention whatever to the fixed guide 21, the latter remaining constantly in its fixed relation to the needle-opening 17.

It is frequently desirable that the forward ends of the guides 21 22 shall bear a certain definite relation to the upper surface of the bed-plate 12 or throat-plate 16, and this result may be attained in the attachment made the subject of this application, since by loosening the thumb-screw 56 the rod 24 may be turned axially, so as to move the forward ends of the guides 21 and 22 downward or upward, as occasion may require. It may be desirable also that the tongue 44, carrying the finger 45, shall be capable of adjustment, so that the said finger 45 may bear a certain relation to the fabric folded upon the same in accordance with the thickness of the fabric or other characteristic, and therefore the operative may, by loosening the screw 47, tilt the tongue 44 to a limited extent and thereby cause the forward portion of the finger 45 to move downward or upward within the guide 22, the tongue 44 being then secured in position by tightening the screw 47.

The operation of forming the hem on a handkerchief and sewing the seam by means of a vibrating needle is well understood in this art and will require no special explanation. The present invention is confined to the means for properly forming the hem and preserving the hem in uniform condition while the needle is sewing the seam. The method of adjusting the guide 22 for different widths of seams has been hereinbefore sufficiently explained, and the method of applying the attachment to the machine will be understood from the foregoing description. It is frequently desirable to remove the guides 21 and 22 from their position illustrated in Fig. 1 without entirely detaching them from the machine, and when this result is desired it is in the present instance simply necessary to loosen the thumb-screw 56 and without disturbing the guides 21 22 move the rod 24 to the right through the sleeve 55 until the casting 25 brings up against the left-hand end of the bracket 52. Thus without disturbing the relationship of the guides 21 22 with respect to one another the said guides, fastened upon the rod 24, may be moved to the right entirely clear of the presser-foot and adjacent parts of the machine. When it is desired to restore the guides 21 and 22 into the position for performing their usual

duties, it will simply be necessary to pull the rod 24 to the left until the flange 61 of the plate 57 again snaps into the groove 62 of said rod 24, the thumb-screw 56 being then again tightened. The operative may move the guides 21 and 22 into the position for work, since when the flange 61 of the plate 57 snaps into the groove 62 it will be an indication that the fixed guide 21 has reached its proper position.

It is quite a convenience to have the rod 24 of some considerable length, as shown, since thereby the bracket 52 may be secured entirely out of the way of the operative, and when the hemmer, with its rod 24, is shifted toward said bracket it passes into a position where it will not be an obstruction to the operative in using the sewing-machine for any usual purpose.

The form, construction, and relation of several parts of the hemmer are such that durability of structure is secured, together with entire convenience in adjustment and use, and without occupying an undue space upon the bed of the sewing-machine head.

By adjusting the bracket 52 transversely of the bed-plate 12 the forward ends of the guides 21 22 may be moved toward or from the longitudinal line of the needle-opening 17. By adjusting the rod 24 longitudinally within the sleeve 55 of the bracket 52 the rigid guide 21 may be brought into the desired relation to the said needle-opening, and by adjusting the guide 22 along the rod 24 the proper width of hem may be assured. The rod 24 may also be adjusted axially to give the proper tilt to the guides 21 and 22, and likewise the tongue-plate 44 may also be tilted to meet special conditions that may arise.

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

1. A hemmer comprising the horizontal rod 24 longitudinally disposed over the bed-plate of the machine, and the hemmer-guides carried at one end thereof and extending at right angles thereto, combined with the bracket 52 secured to the bed-plate of the machine at a distance from the path of the needle greater than the width of space occupied by said guides and receiving the outer portion of said rod, and the lug 35 forming a foot or support for the other portion of said rod and said guides and carried by the same, the said bracket permitting of an axial motion therein of said rod for tilting or adjusting said guides with respect to the bed-plate of the machine, and also permitting of the direct longitudinal motion through the same of said rod for carrying said guides toward said bracket and entirely from but in line with their operative position; substantially as set forth.

2. A hemmer comprising the horizontal rod 24 longitudinally disposed over the bed-plate of the machine, and the hemmer-guides carried at one end thereof and extending at right angles thereto, combined with the bracket 52

secured to the bed-plate of the machine at a distance from the path of the needle greater than the width of space occupied by said guides and receiving the outer portion of said rod, the lug 35 forming a foot or support for the other portion of said rod and said guides and carried by the same, the spring-catch 57 secured to said bracket for engaging a definite portion of said rod when the latter has reached its correct position, and the thumb-screw 56 for then binding said rod to said bracket after said rod has been axially adjusted, the said bracket permitting of an axial motion therein of said rod for tilting or adjusting said guides with respect to the bed-plate of the machine, and also permitting of the direct longitudinal motion through the same of said rod for carrying said guides toward said bracket and entirely from but in line with their operative position; substantially as set forth.

3. A hemmer comprising the horizontal rod 24 longitudinally disposed over the bed-plate of the machine, and the hemmer-guides carried at one end thereof and extending at right angles thereto, combined with the bracket 52 secured to the bed-plate of the machine at a distance from the path of the needle greater than the width of space occupied by said guides and receiving the outer portion of said rod, the lug 35 forming a foot or support for the other portion of said rod and said guides and carried by the same, means substantially as described for securing said bracket 52 to said bed-plate and permitting its adjustment in a direction transversely of the same, the spring-catch 57 carried by said bracket for engaging a definite portion of said rod 24 when the latter has reached its correct position, means substantially as described for securing said spring-catch to said bracket and permitting its adjustment in a longitudinal direction thereon, and the thumb-screw 56 for binding said rod to said bracket after said rod has been properly adjusted, within said bracket, the said bracket permitting of an axial motion therein of said rod for tilting or adjusting said guides with respect to the bed-plate of the machine, and also permitting of the direct longitudinal motion through the same of said rod for carrying said guides toward said bracket and entirely from but in line with their operative position; substantially as set forth.

4. A hemmer comprising a longitudinally-disposed rod, and the rigid guide and folder secured upon the inner end of said rod and extending at right angles thereto, combined with the guide adjustably mounted on said rod and being parallel with said rigid guide, the plate 33 extending from said adjustable guide toward said rigid guide, the tongue-plate 44 intermediate said guides, and above said plate 33 and having the finger 45 extending longitudinally through said adjustable guide, the lug 46 extending upward from said tongue-plate 44 at the outer side of said rigid guide,

the rod 32 secured at one end to said lug, and the frame 25 detachably receiving the other end of said rod, the plate 44 thus being readily detachable and also permitting, without detachment, the ready adjustment of the movable guide toward the stationary guide; substantially as set forth.

5. A hemmer comprising a pair of guides, and a tongue-plate intermediate said guides and around which the fabric is folded to form the hem, and an open-wire frame extending intermediate said guides and above said fabric for preventing the latter from buckling up between said guides, the said frame extending to a point adjacent to the outlet ends of said guides; substantially as set forth.

6. A hemmer comprising a longitudinally-disposed rod and the combined guide and folder rigidly secured upon the inner end of said rod, said combined guide and folder comprising the frame 23 secured upon said rod and having the finger 40 extending through said guide and folder, combined with the frame 25 adjustably secured upon said rod, the guide 22 secured to said frame 25 and having the plate 33 extending therefrom toward said rigid guide, the tongue-plate 44 intermediate the said guides and having the finger 45 within the guide 22, and means adjustably securing said tongue-plate 44 and permitting of the adjustment of said finger 45; substantially as and for the purposes set forth.

7. A hemmer comprising a longitudinally-disposed supporting-rod, the rigid guide and folder secured upon the inner end of the said rod, and the frame 23 by which said guide and folder are secured to said rod and having the concave seat 43 on its upper surface parallel with said supporting-rod, combined with the frame 25 adjustably mounted upon said supporting-rod and having the portion 29 containing the apertures 30 and 31 through the former of which said supporting-rod passes, the guide 22 secured to said frame 25, the tongue-plate 44 intermediate said guides and having the finger 45 within said guide 22, the rod 32 secured to said tongue-plate 44 and extending within said seat 43 and into said opening 31, and means for binding said supporting-rod and said rod 32 within the respective openings 30, 31; substantially as set forth.

8. A hemmer comprising a pair of guides, and a tongue-plate intermediate said guides and around which the fabric is folded to form the hem, and the wire frame bent into serpentine form and extending intermediate said guides and above the fabric for preventing the latter from buckling up during its forward feed; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 9th day of August, A. D. 1899.

JAMES A. CAMERON.

Witnesses:

CHAS. C. GILL,
GUNDER GUNDERSON.