

No. 754,928.

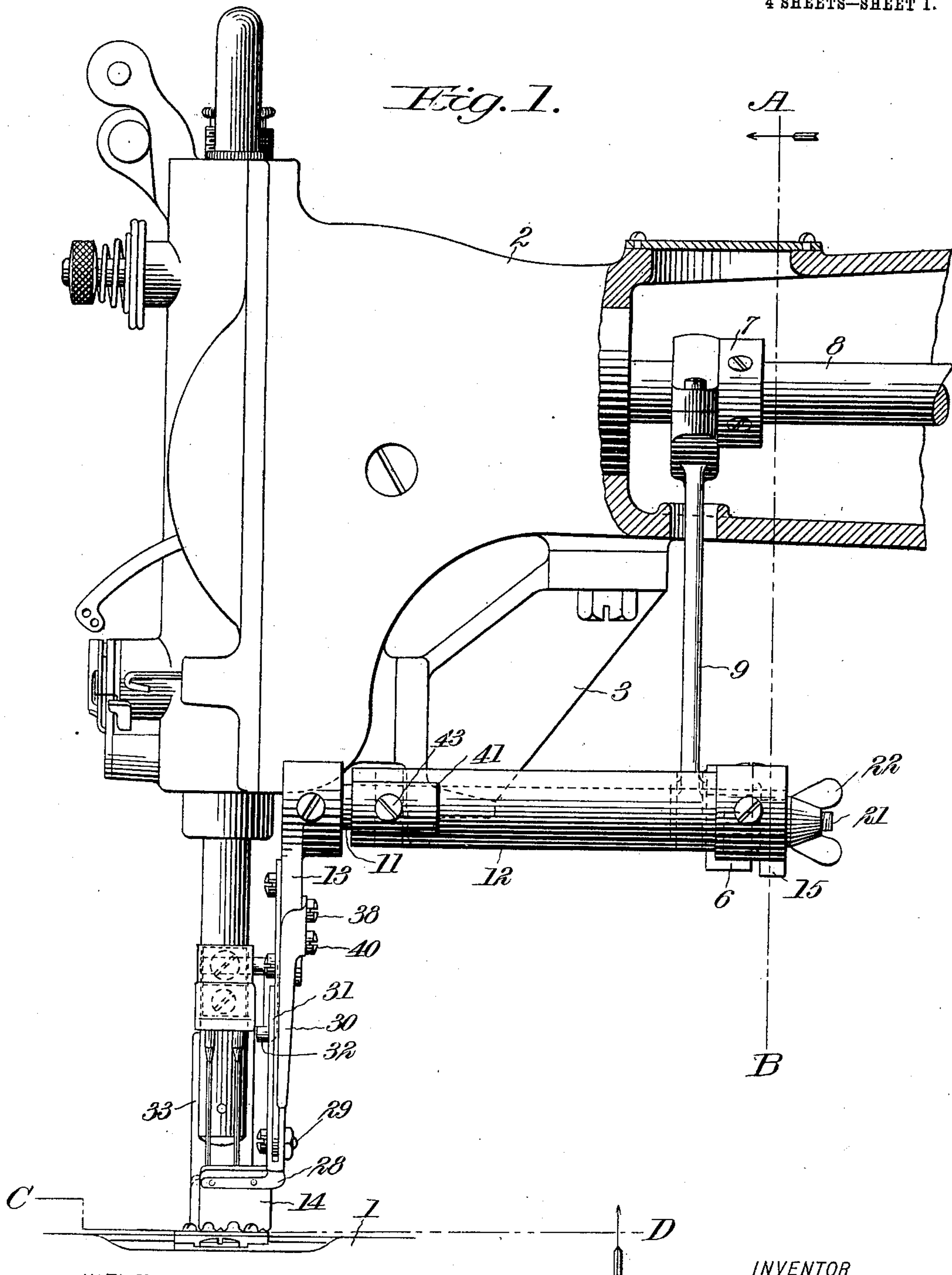
PATENTED MAR. 15, 1904.

A. LAUBSCHER.
RUFFLING MECHANISM FOR SEWING MACHINES.

APPLICATION FILED APR. 29, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

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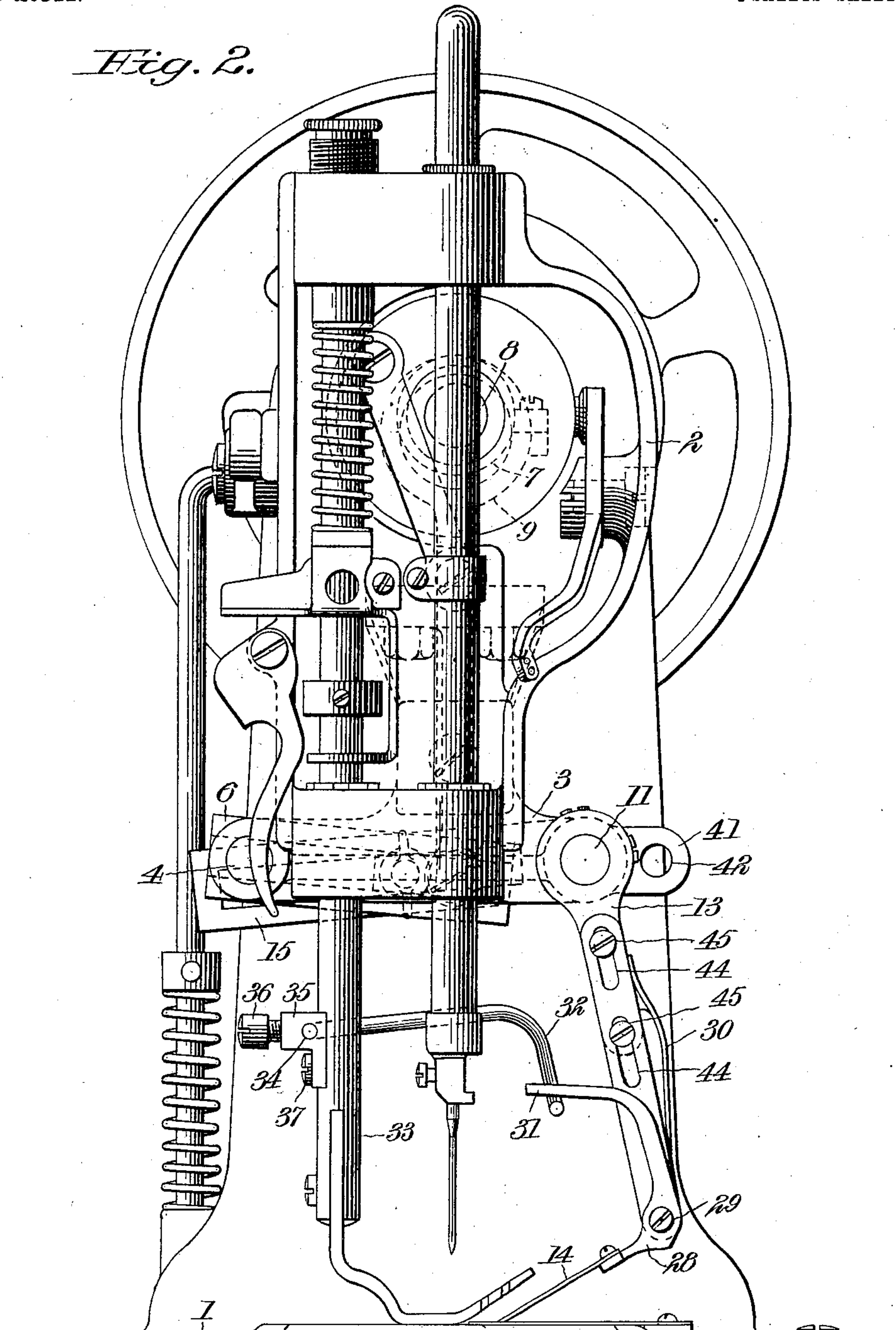
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4 SHEETS—SHEET 2.

Fig. 2.



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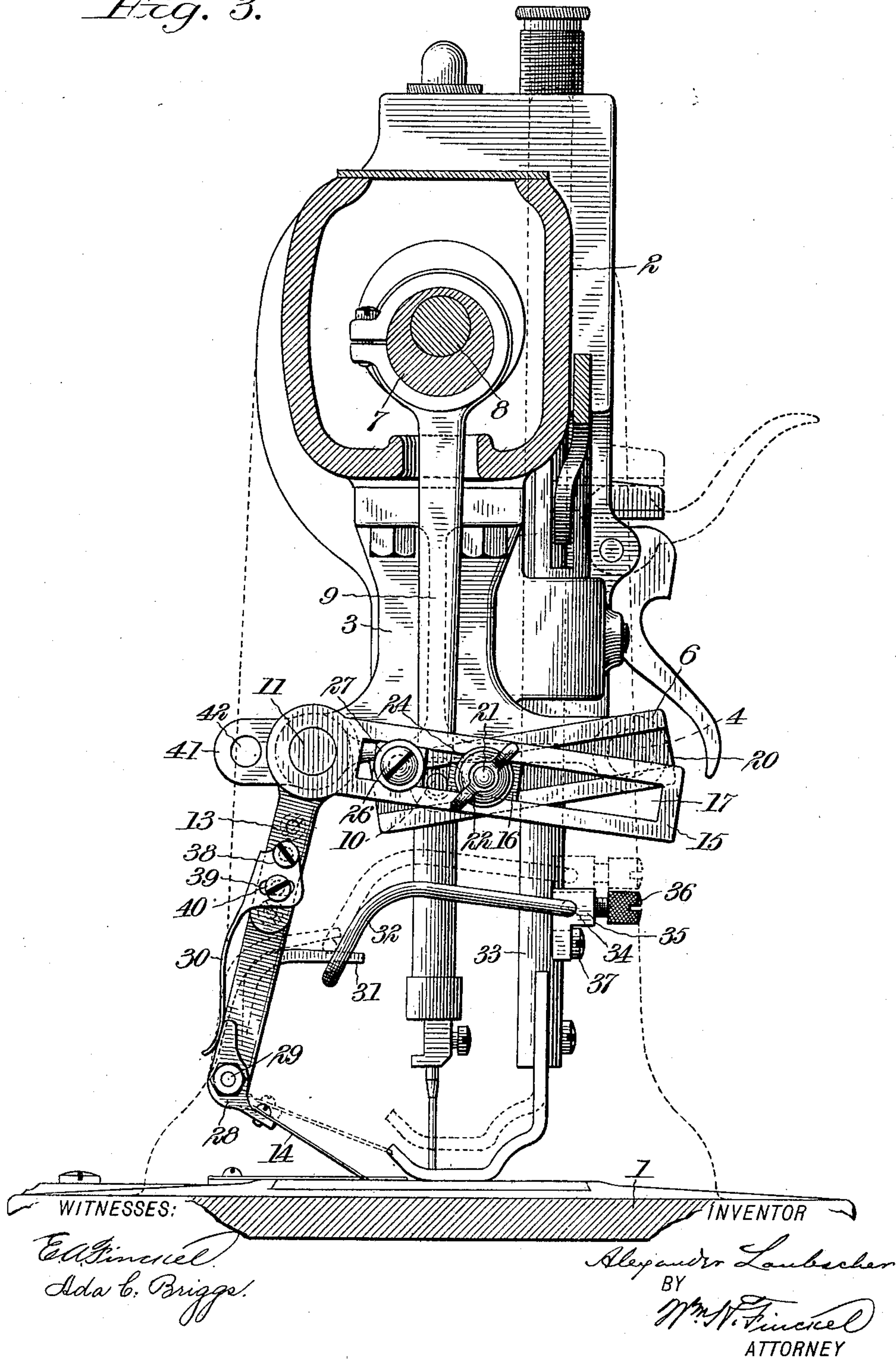
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4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

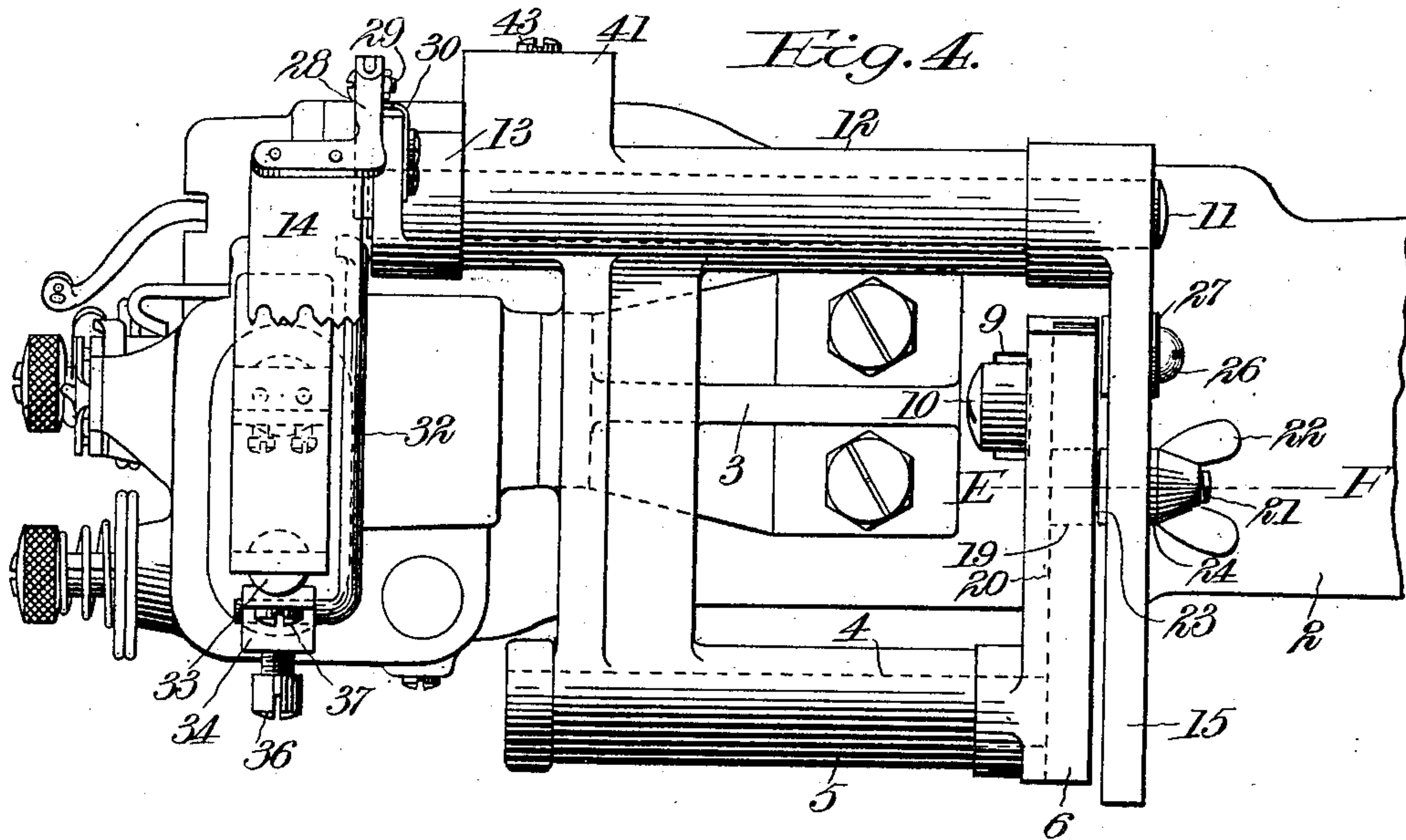


Fig. 5.

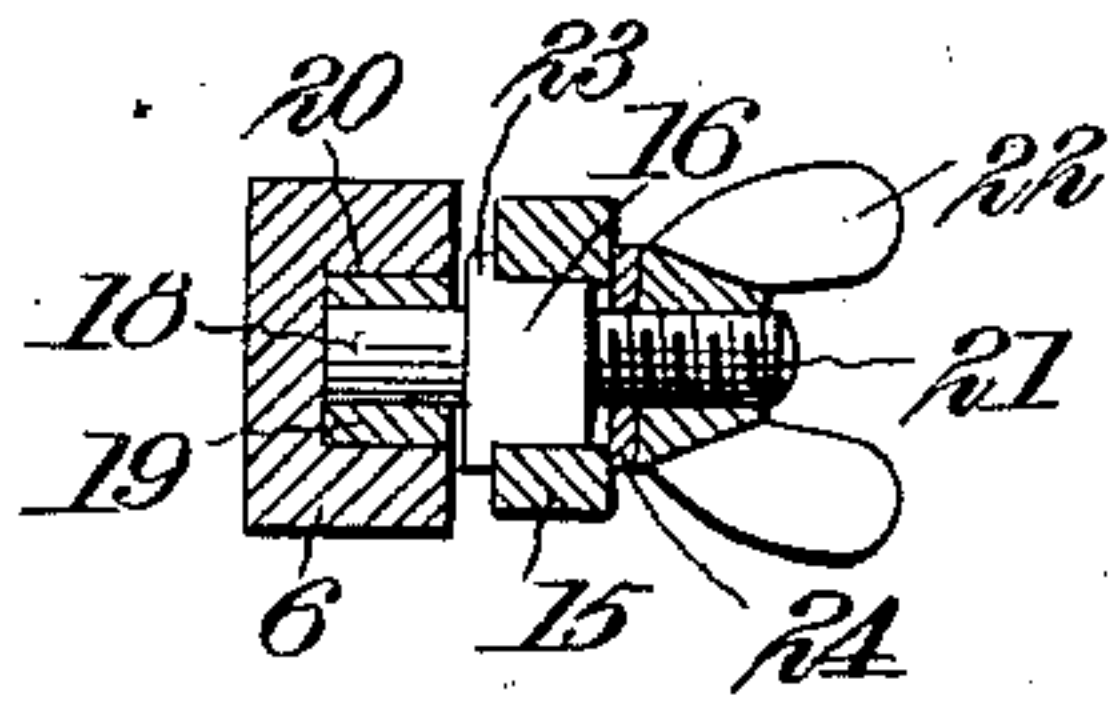


Fig. 6.

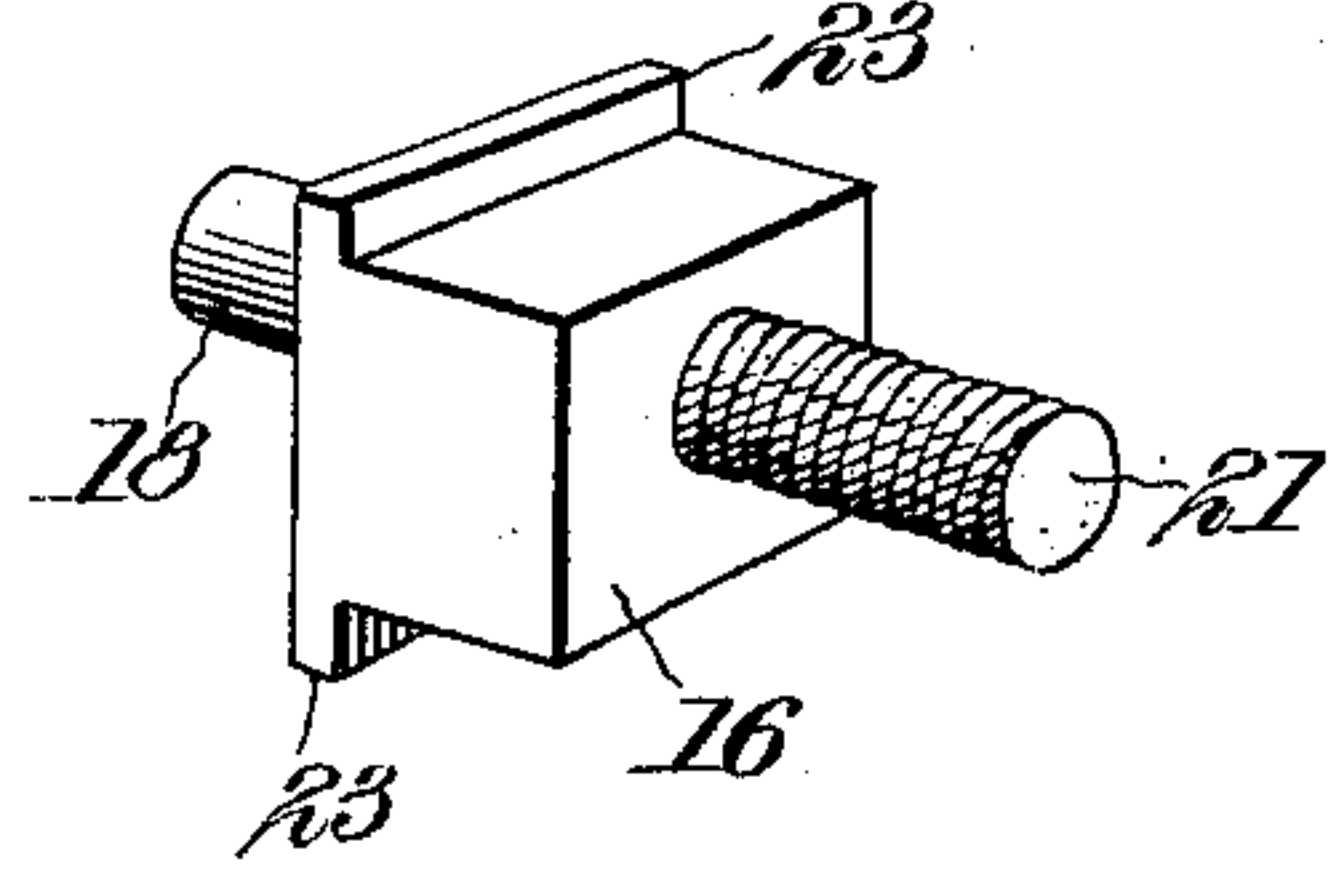


Fig. 7.

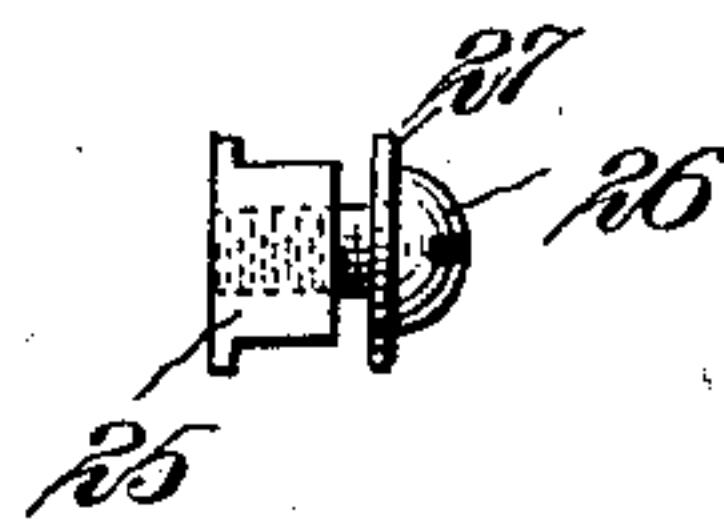
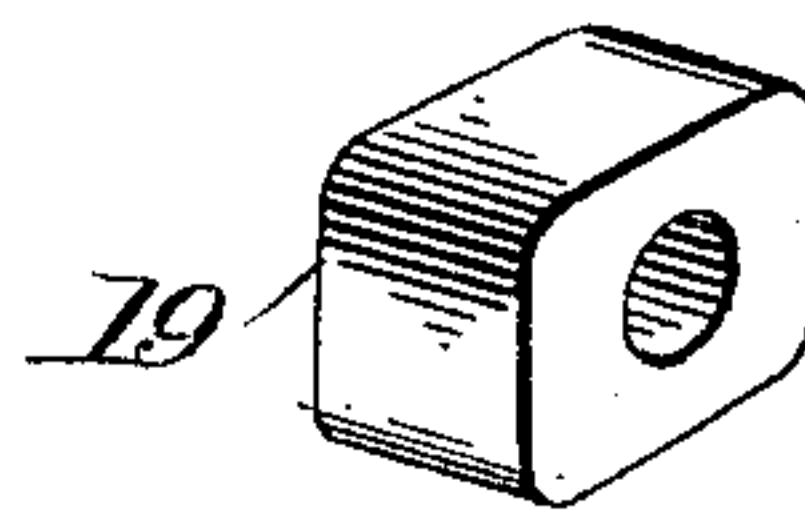


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALEXANDER LAUBSCHER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO
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RUFFLING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 754,928, dated March 15, 1904.

Application filed April 29, 1903. Serial No. 154,857. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER LAUBSCHER, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Ruffling Mechanisms for Sewing-Machines, of which the following is a full, clear, and exact description.

This invention relates to that class of ruffling mechanisms which may be thrown into and out of operation while the sewing-machine is running; and the object of the invention is to provide a durable and efficient ruffling mechanism capable of being run at great speed and adapted to admit of its ruffling-blade being lifted when and as the presser is raised, so as to leave the work-support unobstructed, and thereby facilitate the handling of the goods beneath it.

The invention consists in a ruffling-blade operated from the upper or needle shaft through a composite lever, the fulcrum of which may be shifted independently of the running of the machine, so as to vary the length of throw of the ruffling-blade and also put it out of action.

Another feature of the invention is a connection of the ruffling-blade with the presser-bar to effect the lifting of the blade off of the work, so that the work may be handled as necessary by the operator.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a front elevation of a sewing-machine supplied with the present ruffling mechanism. Fig. 2 is an end elevation with the face-plate removed. Fig. 3 is a sectional elevation taken in the plane of line A B, Fig. 1, illustrating the depressed and raised positions of the ruffling-blade and presser in full lines and dotted lines, respectively. Fig. 4 is an inverted plan view of the ruffling mechanism, taken in the plane of line C D, Fig. 1. Fig. 5 is a cross-section of the lever-coupling, taken in the plane of line E F, Fig. 4. Fig. 6 is a perspective view, on a larger scale, of the pivot-block of the lever-coupling. Fig. 7 is an elevation of an adjustable stop-block. Fig. 8 is

a perspective view, on a larger scale, of the slide-block of the lever-coupling.

1 may indicate the usual bed-plate of a sewing-machine, and 2 is the overhanging arm. To the arm 2 is bolted a bracket 3, which supports the ruffling mechanism.

4 is a horizontal rock-shaft mounted in a bearing 5 on the bracket 3 at the rear side thereof, and 6 is a lever fast on the end of said rock-shaft and connected with an eccentric 7, tight on the upper or driving shaft 8 of the machine, by a link or pitman 9, the lower end of which pitman is pivoted to said lever around a stud 10, and its upper end is strapped around said eccentric in any usual manner. 11 is a horizontal rock-shaft mounted in a bearing 12 on said bracket at the front side thereof. One end of shaft 11 is provided with a lever 13, adapted to carry the creaser or ruffling-blade 14, and the other end is equipped with a lever 15, which extends alongside the lever 6, with which it is coupled. While the invention is not limited to the manner of and means for coupling these levers, the construction now to be described is effective. The levers 6 and 15 are coupled adjustably by a shouldered pivot-block 16, movably secured within a longitudinal slot 17 in the lever 15. Projecting from the block 16 is a stud 18, upon which is pivoted a slide-block 19, which works within a longitudinal groove 20 in the lever 6. Extending from the opposite side of said block 16 is a threaded stud 21, upon which is run a thumb-nut 22. When the nut 22 is tightened, the block 16 will be secured in place, the lever 15 being pinched between the shoulders 23 on said block and a washer 24 next the inner face of the nut. When it is desired to alter the length of stroke of the ruffling-blade, the nut 22 is loosened and the block 16 shifted within the slot 17 toward or away from the fulcrum of the lever 6, which will of course shorten or lengthen the stroke of the ruffling-blade, as the case may be, the length of such stroke being in direct proportion to the distance said block 16 is moved from the fulcrum of said lever 6, as is obvious, it being understood that the fulcrum of the lever 6 is the rock-shaft 4,

to which it is fixed. When it is desired to discontinue the ruffling action, the block 16 is moved to a position concentric with the axis of the shaft 4.

5 An adjustable stop-block may be employed in connection with the lever 15, so as to obtain series of ruffles of uniform creases alternating with spaces of plain stitching. Said stop comprises a shouldered block 25, which fits
10 loosely within the slot 17 of the lever 15 and has tapped therein a screw 26, interposed between the head of which and the face of the lever 15 is a washer 27. The stop-block 25 may be adjusted within the slot 17 for ruffles
15 of any predetermined size, and it serves also as a stop to limit the effective position of the pivot-block 16.

The ruffling-blade 14 is secured to a many-armed bell-crank lever 28, which is slit vertically and pivoted at 29 to the lower extremity of the lever 13. 30 is a spring pressing upon said bell-crank lever in such manner as to keep the ruffling-blade 14 pressed down against the material. The upper arm 31 of
20 said bell-crank is bent inwardly toward the needle over a finger 32, which projects from the presser-bar 33 beneath said arm and is adapted to engage the latter when the presser-bar is raised. The finger 32 is secured in a
25 socket 34 in a clip 35 by a set-screw 36, tapped in said clip, which is fastened on the presser-bar 33 by a screw 37 or other means, and by means of the set-screw 36 the altitude of the finger may be varied, so as to lift the
30 ruffling-blade more or less. When the presser-bar is raised for the purpose of introducing or removing the work, the finger 32 will engage the upper end 31 of the bell-crank 28 and cause the ruffling-blade to be lifted also,
35 so that the work-support will not be obstructed, thereby facilitating the manipulation of the material beneath the presser, which of course will permit rapid and easy handling of the work.

45 In various kinds of work wherein several plies of material are used, the lower ply only of which it is desired to ruffle, while the remaining plies are simultaneously stitched thereto, it is necessary to so adjust the position of the finger 32 with respect to the upper
50 arm 31 of the bell-crank 28 that when the presser is raised the ruffling-blade will be so raised as to leave a space beneath said blade and the work-support and also above said
55 blade and the under side of the presser, as shown in dotted lines in Fig. 3, so that ample spaces will be provided for the manipulation of both the ruffled ply of material, which passes beneath said blade, and the plain strip of material, which passes over said blade and be-
60 neath the presser. In order to vary the pressure of the ruffling-blade to suit the requirements of materials of different texture, the spring 30 is made adjustable, and to this end

said spring is pivoted at its heel end around a 65 screw 38, tapped in the lever 13, and is provided with a slot 39, through which passes a screw 40, tapped in the lever 13, so that the spring may be shifted to increase or decrease
70 its pressure upon the bell-crank 28, and the screw 40 when made fast serves to hold said spring in its adjusted position, as will be clearly understood by reference to Fig. 3.

The bracket 3 may be provided with an extension 41, having a hole 42 in it, and a set-screw 75 43, the latter being shown in Figs. 1 and 4 only, so as to make it convenient, if desired, to use a hemmer or binder capable of being swung into and out of operative relation with the material. 80

It is within the spirit and scope of this invention to alter the details of construction— as, for example, to substitute for the eccentric and pitman other means for vibrating the levers and to make the lever 13 of a single 85 piece or extensible, as by forming it in two parts, as shown in Figs. 1, 2, and 3, and connecting these parts by slots 44 in one part and binding-screws 45, tapped into the other part— so as to make the attachment applicable to 90 arms of various heights from the bed or otherwise adjusting the ruffling-blade.

What I claim is—

1. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a suitable bearing 95 therefor, a lever fixed upon one end of said rock-shaft, a spring-pressed ruffling-blade on said lever, and a lever projecting radially from the other end of said rock-shaft, in combination with a second rock-shaft, a bearing 100 therefor parallel with the first-mentioned rock-shaft, a lever projecting radially from said second rock-shaft and crossing the radially-projecting lever on the first rock-shaft, means for coupling the radially-projecting levers at different points between their ends, and means to vibrate said levers. 105

2. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a suitable bearing 110 therefor, a lever mounted upon one end of said rock-shaft, a spring-pressed ruffling-blade on said lever, and a slotted lever mounted upon the other end of said rock-shaft, in combination with a second rock-shaft, a bearing 115 therefor parallel with the first-mentioned rock-shaft, a grooved lever on said second rock-shaft, means for coupling said slotted lever and grooved lever together, and means for vibrating said levers.

3. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a suitable bearing 120 therefor, a lever mounted upon one end of said rock-shaft, a spring-pressed ruffling-blade on said lever, and a longitudinally-slotted lever mounted upon the other end of said rock-shaft, combined with a second rock-shaft, a bearing for said second rock-shaft arranged 125 parallel with the bearing for the first-men-

tioned rock-shaft, a longitudinally-grooved lever on said second rock-shaft, an adjustable stud connecting said levers, and means for vibrating said levers.

5 4. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a suitable bearing therefor, a lever mounted upon one end of said rock-shaft, a spring-pressed ruffling-blade on said lever, and a longitudinally-slotted lever mounted upon the other end of said rock-shaft, combined with a second rock-shaft, a bearing for said second rock-shaft arranged parallel with the bearing for the first-mentioned rock-shaft, a longitudinally-grooved lever on said second rock-shaft, an adjustable stud connecting said levers, a driving-shaft for the sewing-machine, and a connection between said driving-shaft and levers for vibrating the latter.

20 5. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a suitable bearing therefor, a lever mounted upon one end of said rock-shaft, a spring-pressed ruffling-blade on said lever, and a longitudinally-slotted lever mounted upon the other end of said rock-shaft, combined with a second rock-shaft, a bearing for said second rock-shaft arranged parallel with the bearing for the first-mentioned rock-shaft, a longitudinally-grooved lever on said second rock-shaft, an adjustable stud connecting said levers, a sewing-machine driving-shaft, an eccentric thereon, and a pitman connected to said eccentric at one end and to one of the levers at the other end.

35 6. In a sewing-machine, having an overhanging arm, and a needle-driving shaft, a ruffling mechanism comprising a bracket made fast to the overhanging arm, parallel bearings at front and rear of said bracket, a horizontal rock-shaft in each of said bearings, a slotted lever mounted upon one end of one of said rock-shafts, a spring-pressed ruffling-blade fast on the said lever, and a slotted lever mounted upon the other end of said rock-shaft, combined with a grooved lever fast on the end of the other rock-shaft, an adjustable coupling for connecting said slotted and grooved levers, and means for transmitting motion to said

slotted and grooved levers from the driving-shaft. 50

7. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a bearing in which it is mounted, a lever fast to one end of said rock-shaft, a spring-pressed bell-crank lever pivoted at the lower portion of said lever, 55 and a ruffling-blade fast to one arm of said bell-crank lever, the other arm of said bell-crank lever extending over toward the presser-bar of the sewing-machine, in combination with said presser-bar, and a finger carried by 60 said bar and in engagement with the projecting arm of the bell-crank lever.

8. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a bearing in which it is mounted, a lever fast to one end 65 of said rock-shaft, a spring-pressed bell-crank lever pivoted at the lower portion of said lever, and a ruffling-blade fast to one arm of said bell-crank lever, the other arm of said bell-crank lever extending over toward the presser-bar of the sewing-machine, in combination with said presser-bar, and an adjustable finger carried by said bar and in engagement with the projecting arm of the bell-crank lever. 70

9. In a ruffling mechanism, for sewing-machines, a horizontal rock-shaft, a bearing in which it is mounted, a lever fast to one end of said rock-shaft, a bell-crank lever pivoted at the lower portion of said lever, a spring bearing upon said bell-crank lever, means to 80 vary the pressure of said spring upon said bell-crank lever, and a ruffling-blade fast to one arm of said bell-crank lever, the other arm of said bell-crank lever extending over toward the presser-bar of the sewing-machine, in combination with said presser-bar, 85 and a finger carried by said bar and in engagement with the projecting arm of the bell-crank lever.

In testimony whereof I have hereunto set 90 my hand this 28th day of April, A. D. 1903.

ALEXANDER LAUBSCHER.

Witnesses:

F. W. OSTROM,
A. M. DONIHEE.