

No. 713,884.

Patented Nov. 18, 1902.

J. H. HOOD.
CARPET SEWING MACHINE.

(Application filed Feb. 25, 1902.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

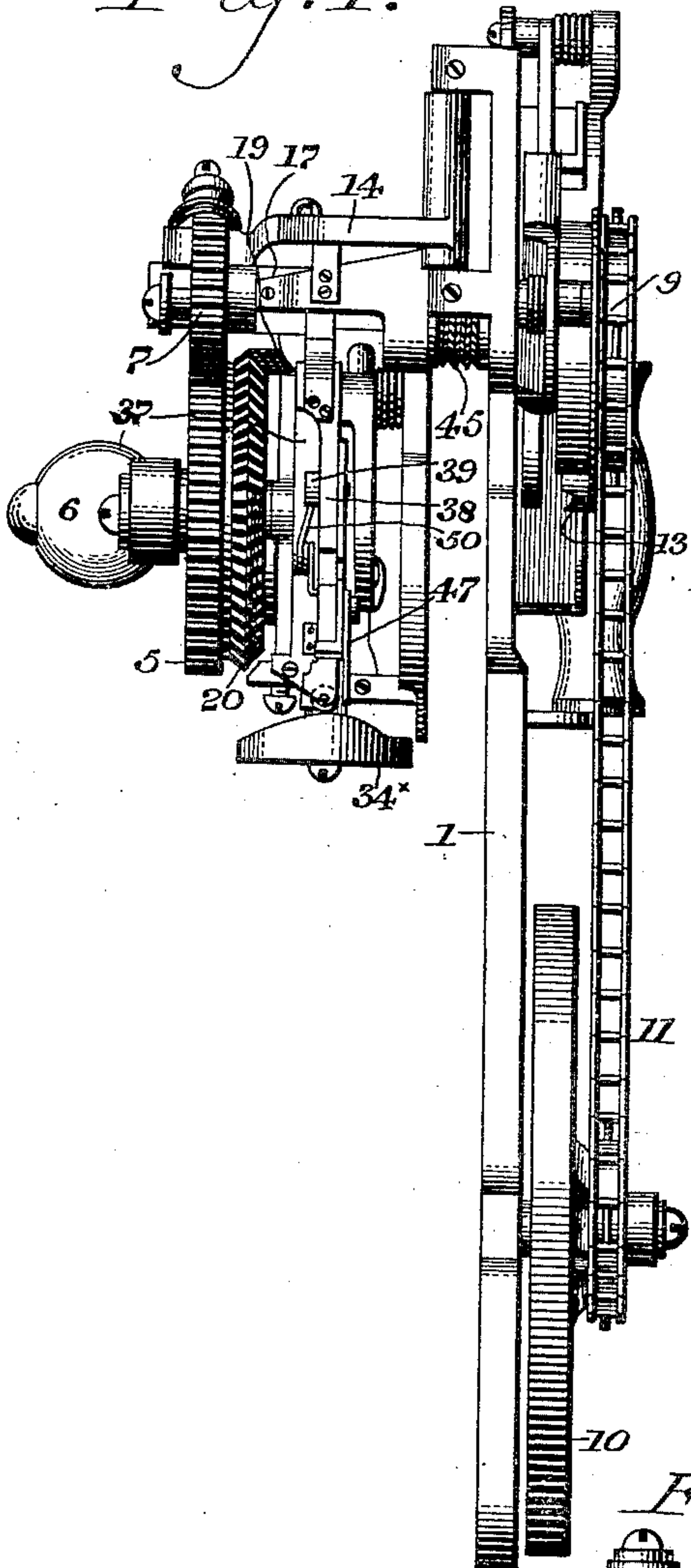


Fig. 2.

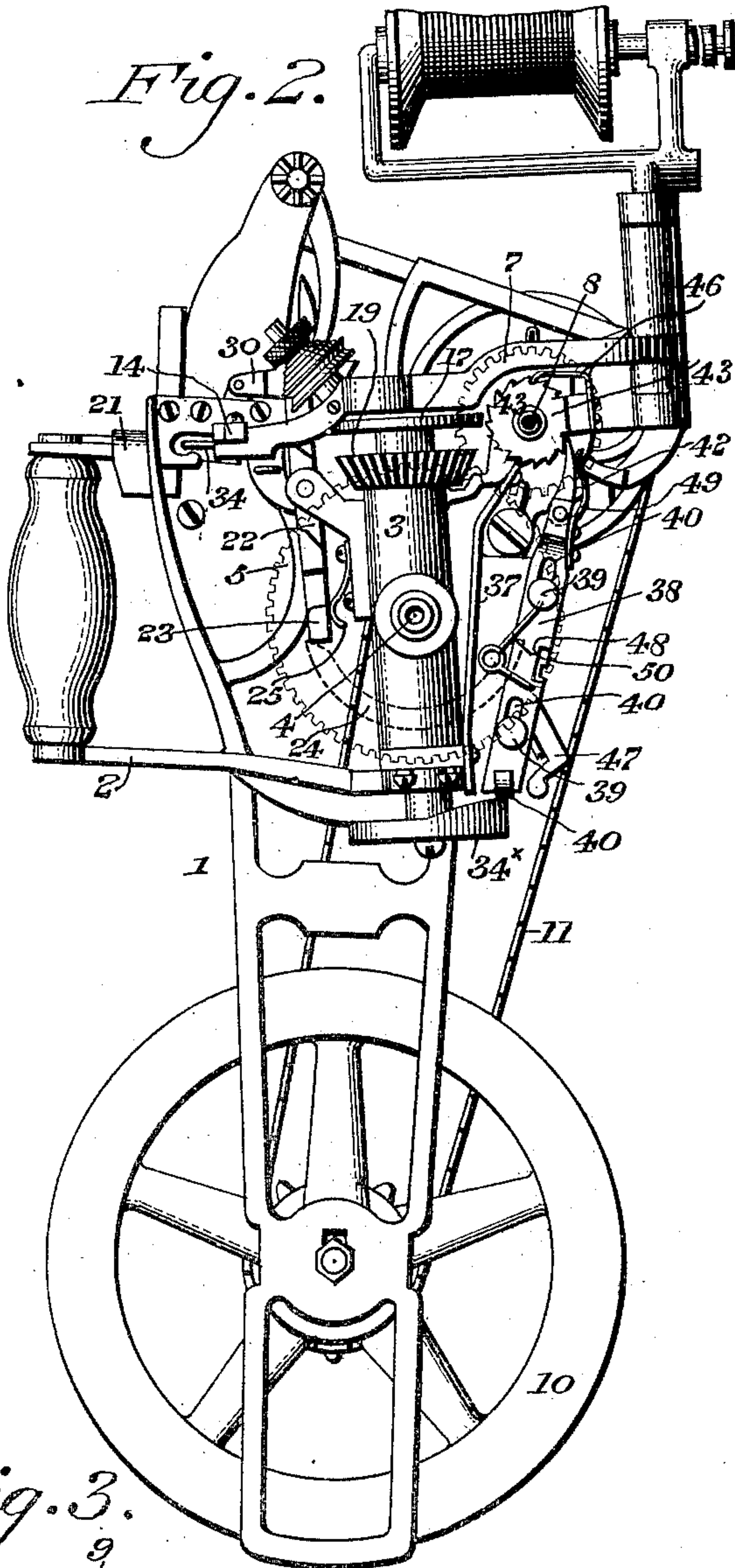
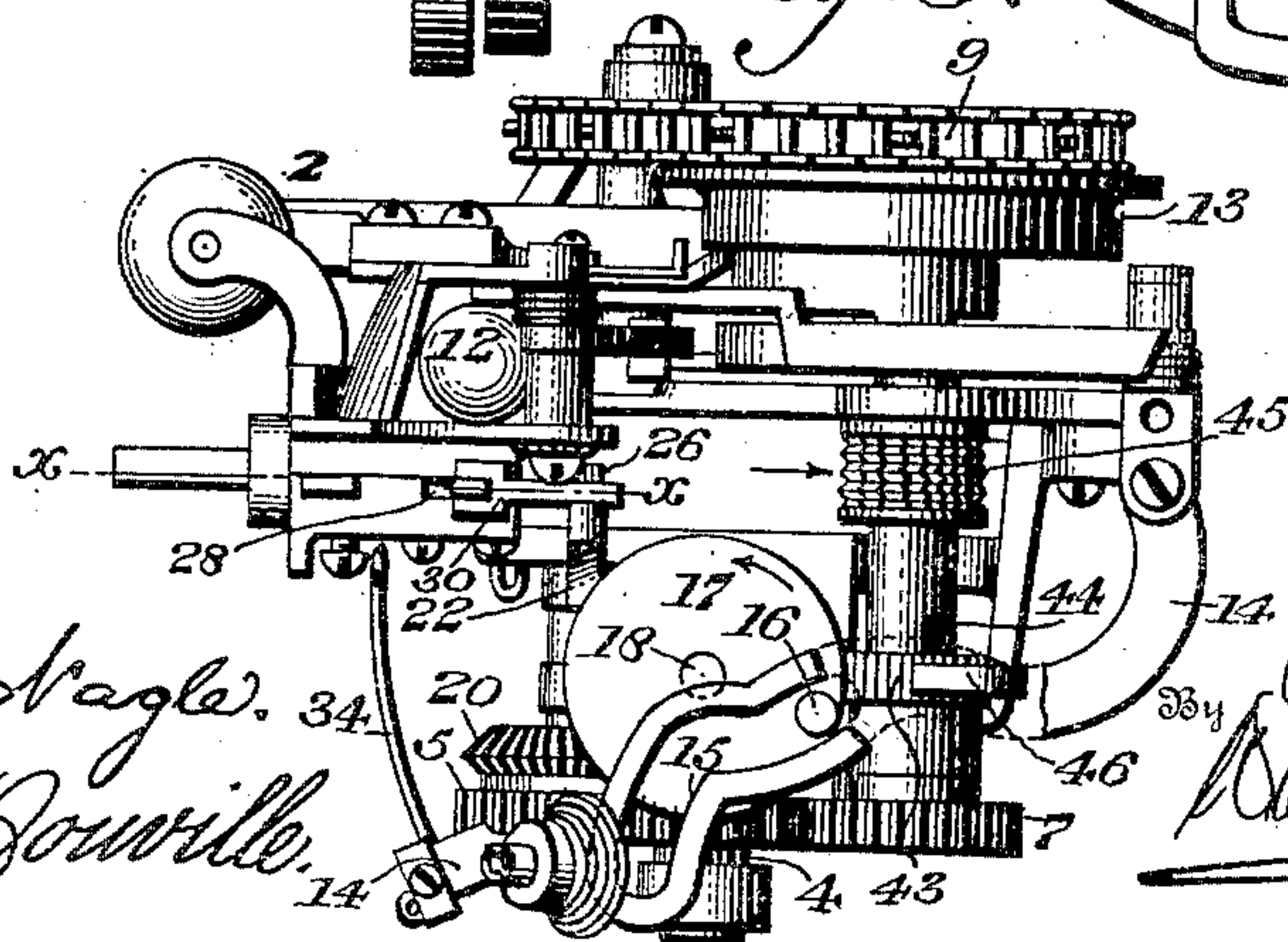


Fig. 3.



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Fig. 9.

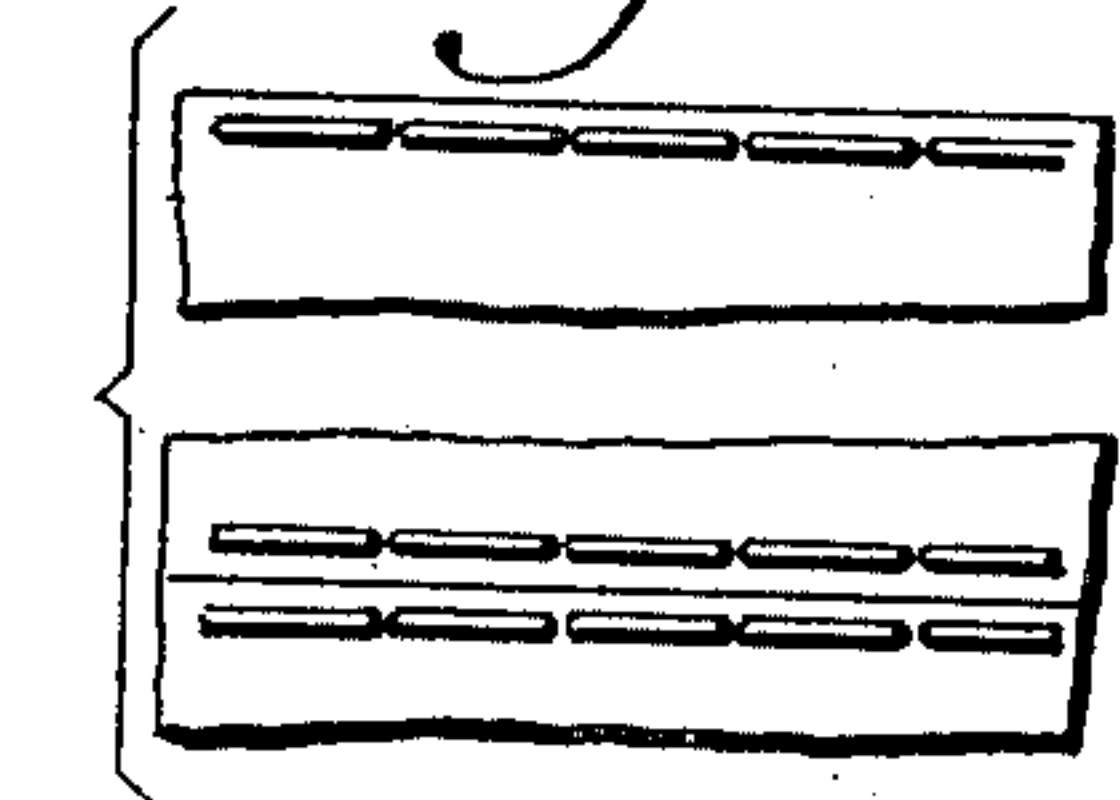


Fig. 4.

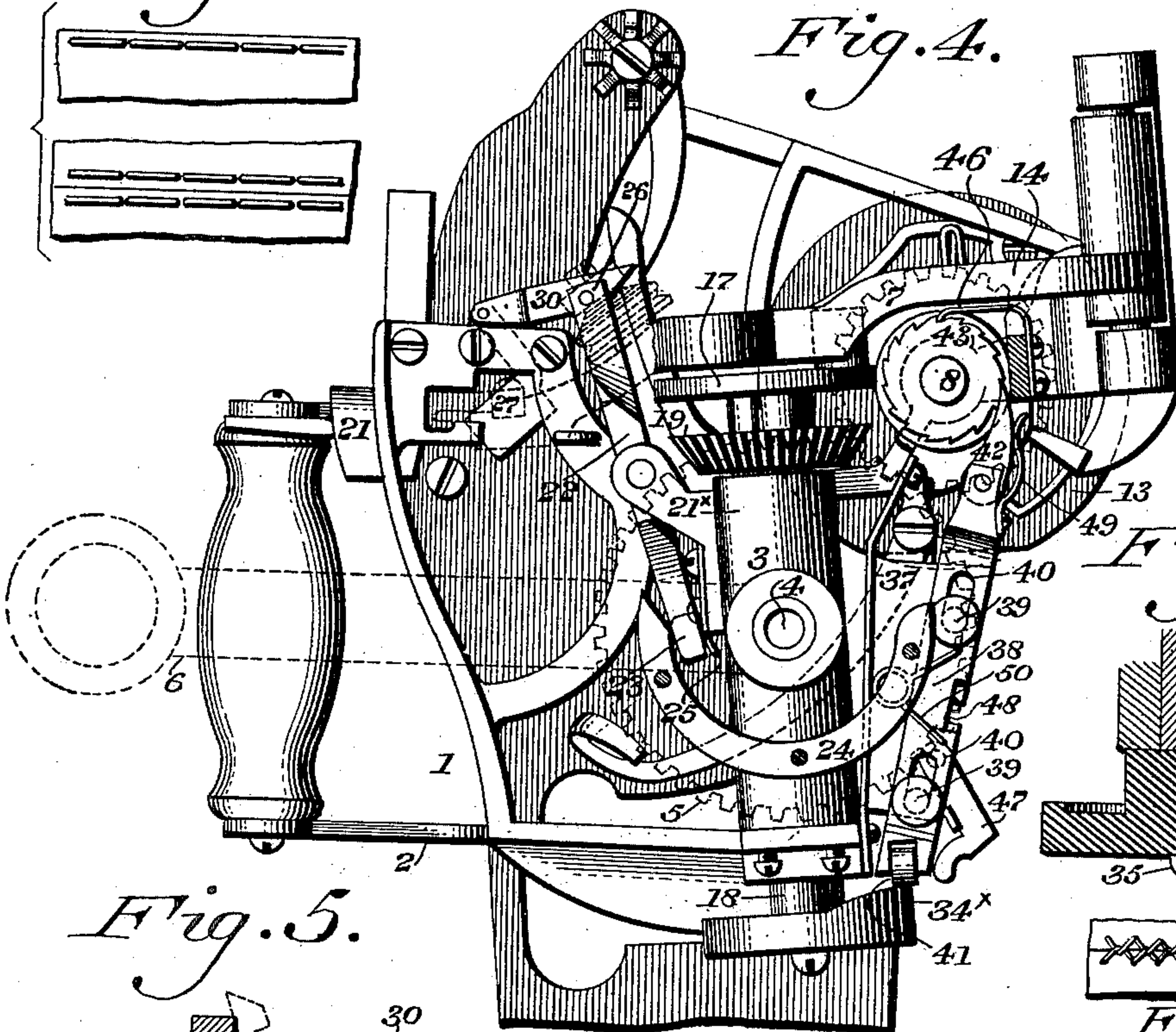


Fig. 8.

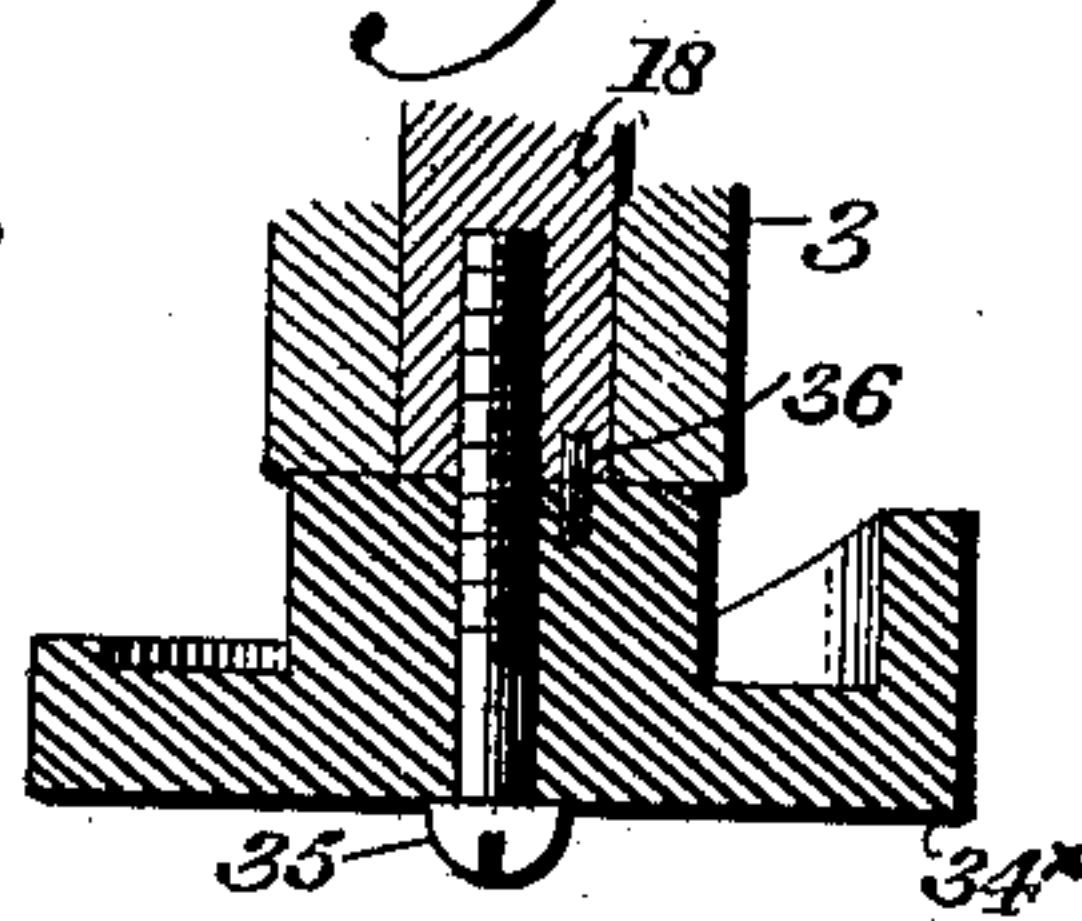


Fig. 5.

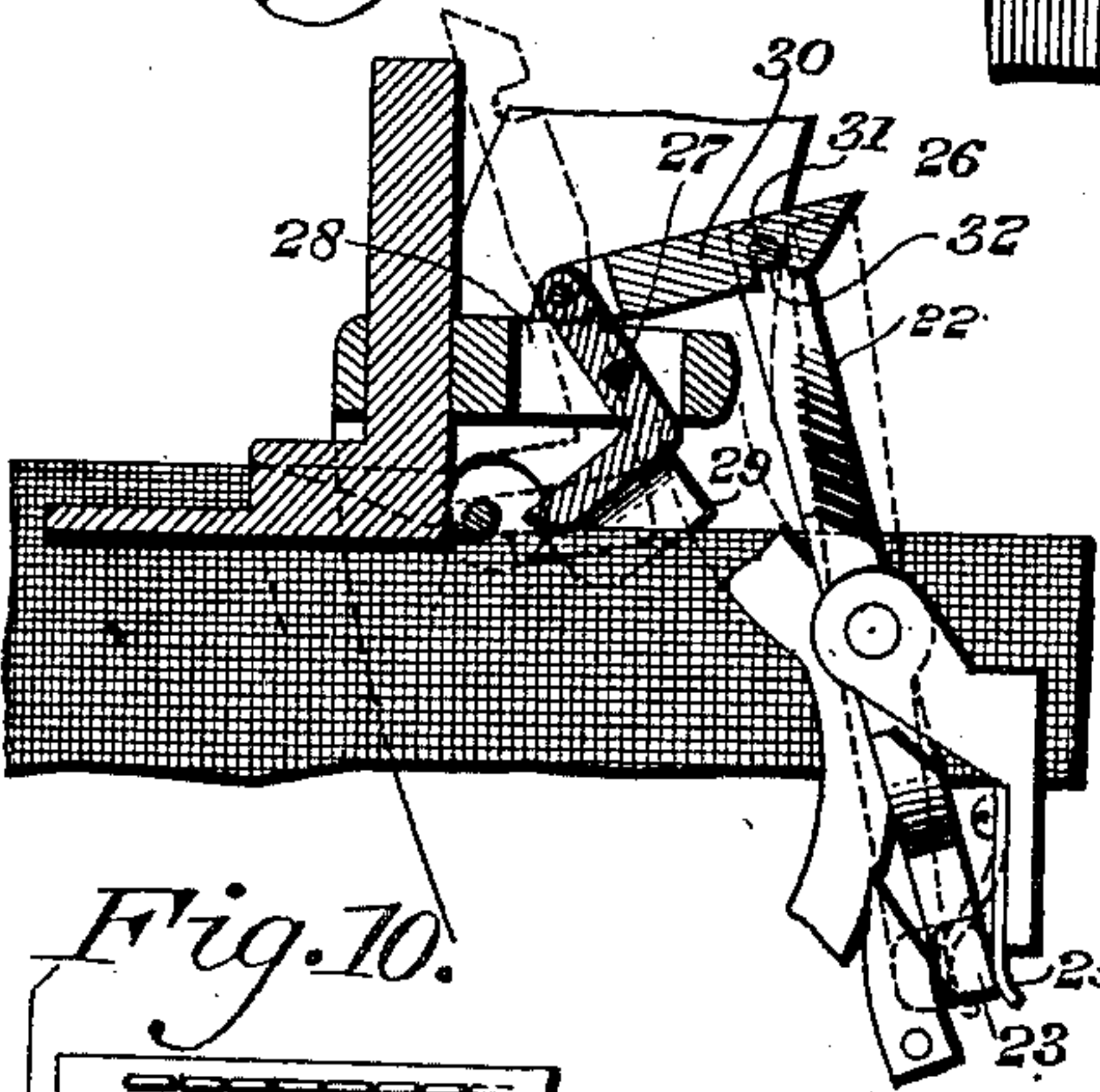


Fig. 12.



Fig. 6.

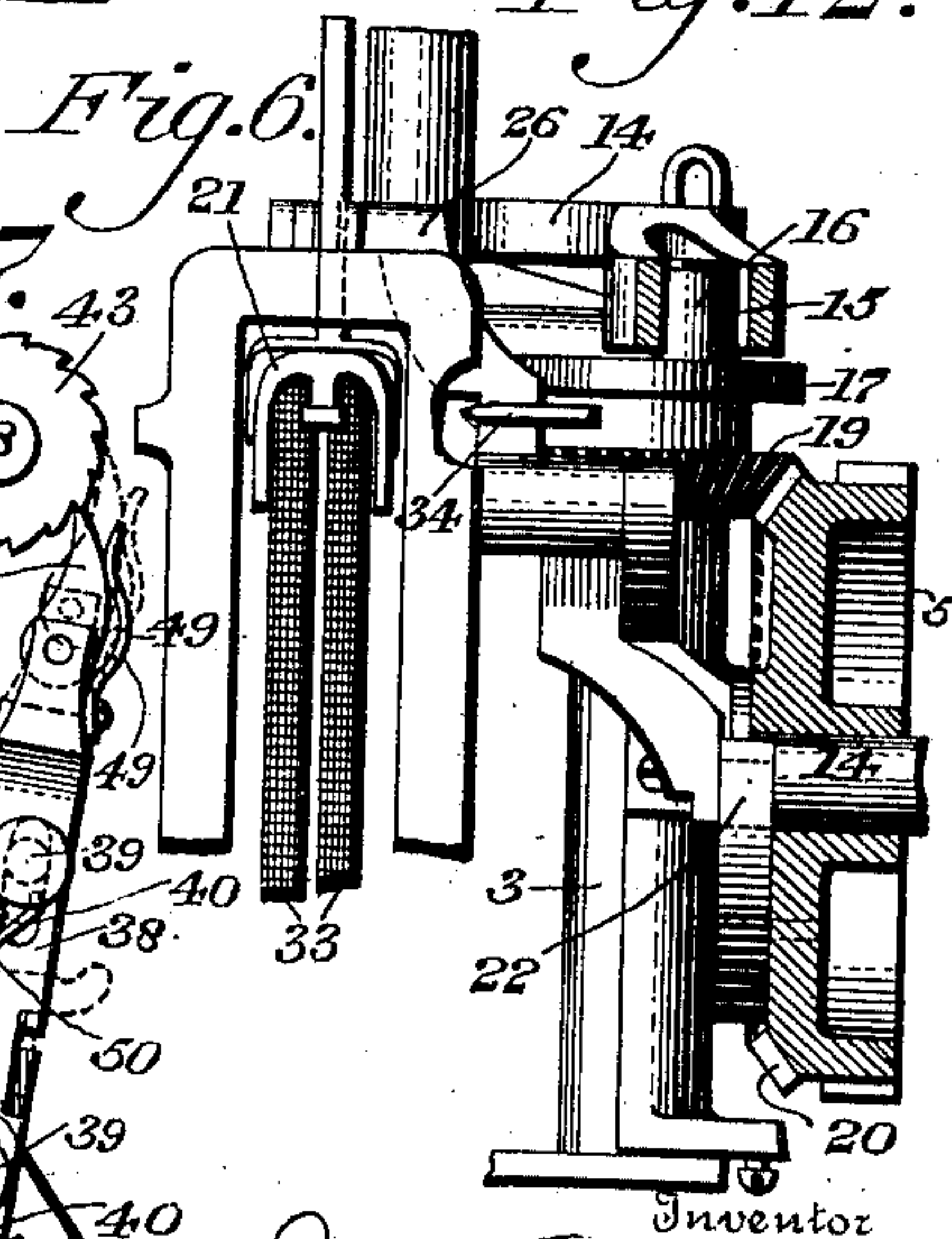


Fig. 7.

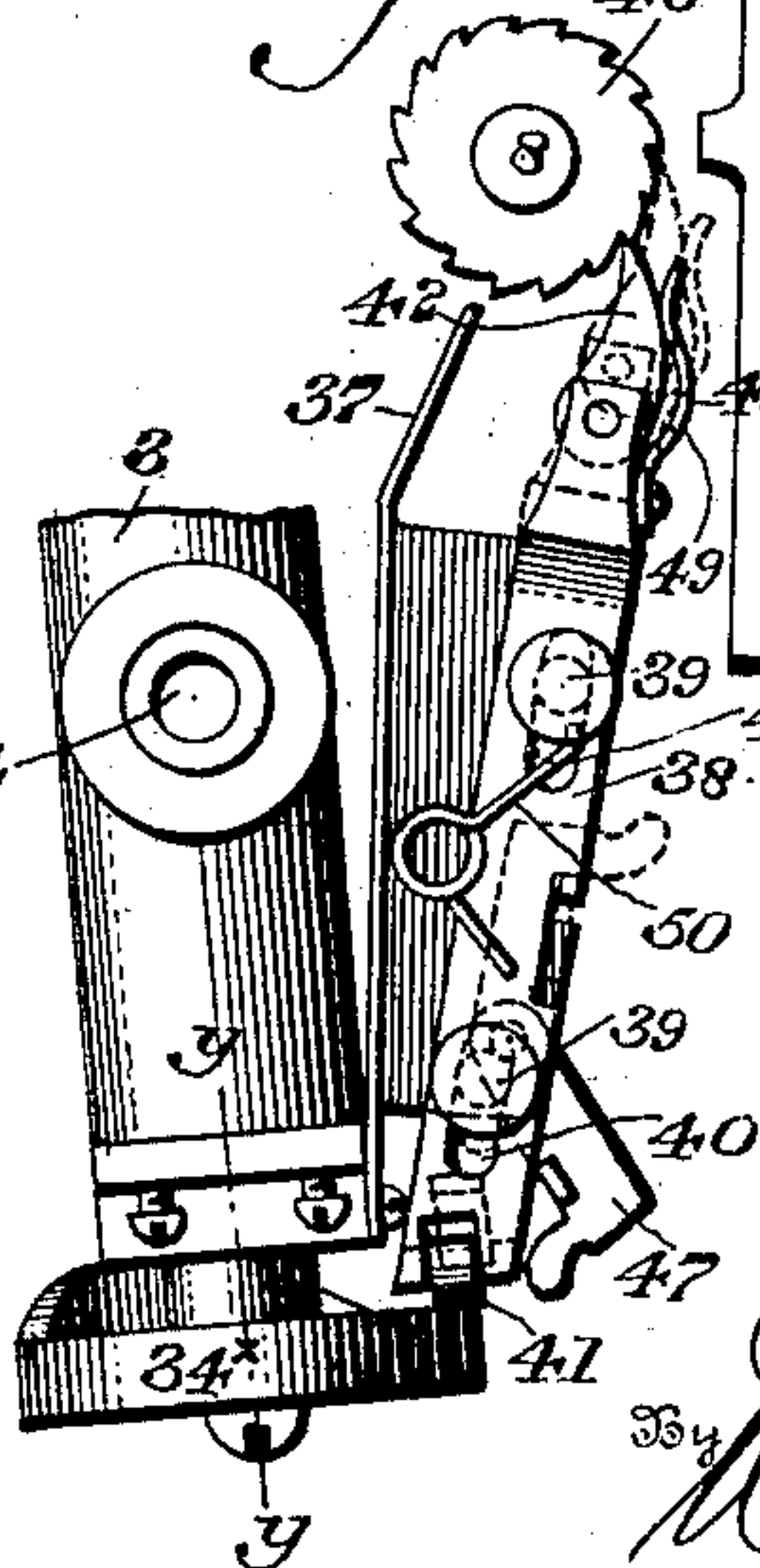


Fig. 10.

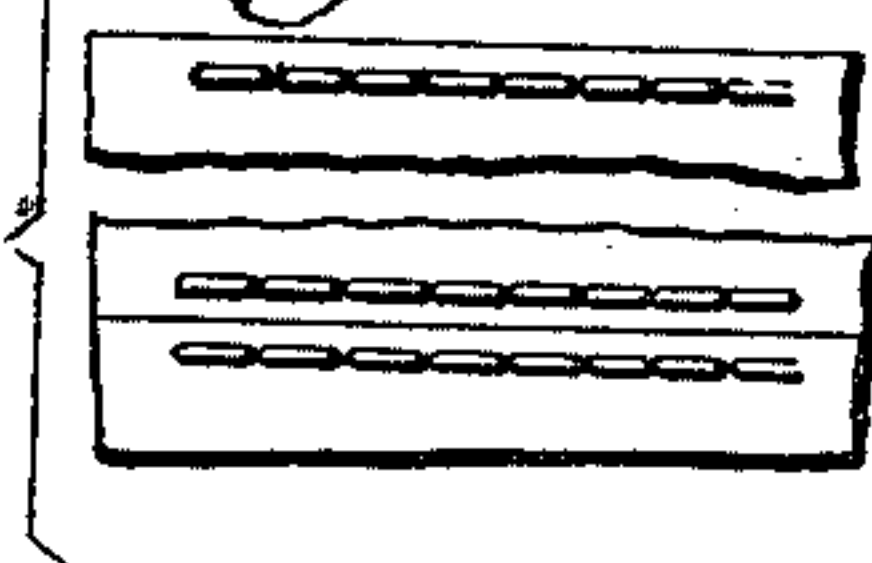


Fig. 11.



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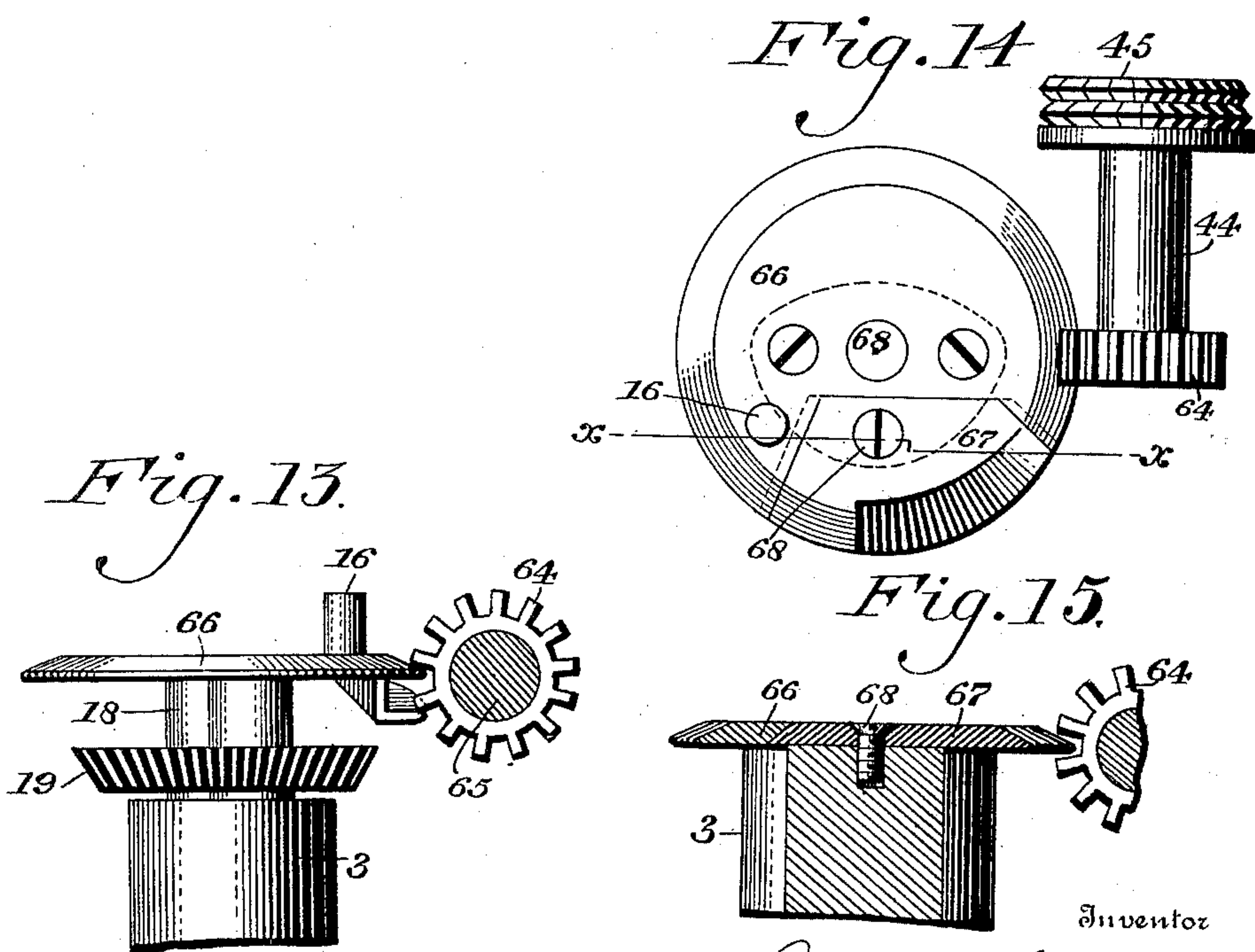
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

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CARPET-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 713,884, dated November 18, 1902.

Application filed February 25, 1902. Serial No. 95,535. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. HOOD, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Carpet-Sewing Machines, of which the following is a specification.

My invention consists of improvements in carpet-sewing machines, and has for its object to provide a machine that can be employed for making through-and-through stitches or alternate through-and-through overcast stitches and also to provide means for regulating the length of the stitch.

My invention further consists of the details of construction hereinafter fully described and claimed.

Figure 1 is the rear elevation of the carpet-sewing machine embodying my invention. Fig. 2 is a side elevation thereof, taken from the right-hand side of Fig. 1, with the driving-gear shown in dotted lines. Fig. 3 is a top plan thereof. Fig. 4 is a side elevation, on an enlarged scale, of the upper portion of the machine, similar to that shown in Fig. 2, with certain parts shown in dotted lines for convenience of illustration, the parts being in different positions from that shown in Fig. 2. Fig. 5 is a fragmentary sectional view taken on the line *xx* of Fig. 3. Fig. 6 is a front elevation of the parts shown in Fig. 5. Fig. 7 is a side elevation of a portion of the feed mechanism. Fig. 8 is a vertical section taken on the line *yy*, Fig. 7. Figs. 9, 10, 11, and 12 show the different forms of stitches. Fig. 13 represents a perspective view of a modified construction of the feeding devices. Fig. 14 represents a plan view of another modification thereof. Fig. 15 represents a sectional view taken on line *xx*, Fig. 14.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the frame of a carpet-machine of familiar construction provided with a handle 2, by means of which it may be guided, and with an upright bearing 3, rigid with said frame, upon which the shaft 4, carrying the driving-wheel, is mounted, a suitable crank-arm 6 being employed to turn said shaft. The gear 5 meshes with pinion 7 upon the bobbin-shaft 8, mount-

ed in bearing upon the frame, said bobbin-shaft carrying the gear 9, that is geared to the balance-wheel 10 by chain 11. The bobbin 12 is operated by familiar mechanism, actuated by a cam 13, carried by the bobbin-shaft 8, and as this does not form part of my invention a further description thereof is deemed unnecessary.

The needle-arm 14 is pivoted upon the frame of the machine, being provided with a cam-slot 15, that engages a pin or projection 16 upon the disk 17, carried by the upper end of the shaft 18, mounted in said upright bearing 3, said shaft being provided with a bevel-gear 19, meshing with bevel-gear 20, rigid with driving-gear 7. The construction and operation of this needle-arm also does not form part of my invention, so that a further description thereof is deemed unnecessary, the stitch being made in the usual way as the carpet passes through the guide 21.

One part of my invention relates to forming an overcast and interlocked stitch alternately with through-and-through stitches that are formed by a machine of the character described, and to accomplish this I have devised a mechanism which at every other stitch presses the edges of the two pieces of carpet beyond or to one side of the path of the needle, so that the needle will not pass through the carpet at every other stitch, and this will form an overcast stitch between the through-and-through stitches. The advantage of this stitch is that when it is employed it holds the edges of the pieces of carpet sufficiently close without forming a ridge usually present when employing only the through-and-through stitch.

In Figs. 1 to 7 I have shown one form of mechanism for moving the pieces of carpet to one side to form this overcast stitch at every other stitch, while not interfering with the formation of the through-and-through stitch between these overcast stitches. Mounted upon a bracket 21, conveniently fastened to the upright bearing 3, is a lever 22, one end of which is provided with a projection 23, situated in the path of the cam 24, carried by the driving-wheel 5, said cam extending about one-half around said driving-wheel, so that the lever 22 is under the in-

fluence thereof during one-half the revolution, a spring 25 acting upon the rear side of the lower end of this lever 22 and serving to return it to its normal position. This lever is offset, as shown in Figs. 3 and 4, and its upper end is provided with a lateral projection 26, situated over the guide 21. The said guide 21 is of the usual form to introduce the two pieces of carpet in the path of the needle, and when the upper edges of the carpet stand entirely within the guide the needle is passed through and through in the usual manner. Just in the rear of the guide, however, is a presser member 27, pivoted within slot 28 in the upper side of the guide and having a bifurcated lower portion 29, the sides of which taper inwardly toward each other and which are in alinement with guide 21, so that the edges of the pieces of carpet also pass therethrough. The upper end of the presser member 27 is provided with a pivoted dog 30, that is adapted to be engaged with and disengaged from the projection 26 upon the upper end of the lever 22 conveniently by means of a notch 31 in said dog and a pin 32 on said lever. In Fig. 5 the dog 30 is shown as connected with lever 22, and when the parts are in this position it is understood that the through-and-through stitches and the overcast stitches are formed alternately, because the lever 22 in vibrating depresses the presser member 27 at every other stitch. The member 27 is shown depressed in Fig. 5, with the upper edge of the carpet below the needle-path; but when the lever 22 vibrates in the other direction the carpet will rise, so that the needle will pass through the edges thereof.

The operation is as follows: It is understood that in operating this class of machines two pieces of carpet are stretched with their edges suitably clamped, and the machine is supported thereon with the edges of the pieces of carpet 33 passing through the guide, as shown in Figs. 5 and 6. If the dog 31 is disconnected from the lever 22, it is noted that the weight of the machine and the tension of the carpet will cause the presser 27 to assume a raised position, as shown in dotted lines in Fig. 5, so that the needle 34 passes through the edge of the pieces of carpet at each stroke. Although the lever 22 will be vibrated by the cam 24 of the driving-wheel, it will not communicate any motion to said presser 27. When, however, it is desired to form an overcast stitch alternately with the through-and-through stitches, the dog 30 is connected with the lever 22, as shown in Fig. 5, and then it will be noted that when the cam 24 engages the projection of the lever 22 it will move the lower end of the lever to the rear, and consequently depress the front end of the presser member 27 to the position shown in Fig. 5 and hold it depressed during one-half the revolution of said gear-wheel 5—that is to say, during one stroke of the needle. The revolution of said gear-wheel 5 causes two strokes of the

needle, owing to the difference in the diameter of the bevel-gear 20 and pinion 19. Thus it will be seen that when the presser 27 is depressed it moves the edges of the carpet to one side of the path of the needle which forms this overcast interlocked stitch, as will be apparent from Fig. 5; but when the cam releases the lever 22 spring 25, together with the weight of the machine, will raise the presser and allow the carpet to raise to the upper side of the guide, thus bringing its edges in the path of the needle to make a through-and-through stitch.

Another part of my invention consists of an improved feed mechanism whereby the length of the stitch can be regulated. To accomplish this, the lower end of the shaft 18, mounted in the upright bearing 3, is provided with a cam 34^x, conveniently secured thereto by means of screw 35 and pin 36 to insure the rigid connection. Mounted upon the frame of the machine is a guide-bracket 37, upon which is mounted a slide 38 by means of pins 39, secured to said guide-bracket 37, passing through slots 40 in said slide. The lower end of the slide is provided with an antifriction-roller 41 to engage cam 34^x, while the upper end of the slide carries the pivoted ratchet 42 to engage the ratchet-wheel 43, carried by sleeve 44, rotatable upon shaft 8. This sleeve or hollow shaft carries the feed-wheel 45, that is situated in alinement with the guide 21, and therefore engages the edges of the pieces of carpet, so that as it is turned it will feed the machine by reason of its engagement with the carpet. A pawl 46, mounted upon the frame of the machine, engages said ratchet-wheel 43 to prevent accidental rotation, and the throw of the cam 34^x is sufficient to move the slide 38 a distance equal to two teeth upon the ratchet-wheel 43, and thus turns the toothed feed-wheel 45 a corresponding distance, which makes a long stitch. To reduce the length of the stitch, I provide mechanism for regulating the movement of the slide 38, which in the construction illustrated consists of a pivoted lever 47, mounted upon the guide-bracket 37 and which is adapted to engage the notch 48 on the edge of the slide 38 to hold it partially elevated, so that it does not reach the lower part of the cam 34^x, and thus only half the throw of the cam acts upon the slide and moves the slide a distance of one tooth on the ratchet-wheel 43.

It is understood, of course, that the ratchet 42 is provided with a spring 49 to hold it in engagement with the ratchet-wheel 43, and, furthermore, the spring 50 is conveniently connected with slide 38 and with the head of one of the pins 39 and presses the ratchet in opposition to the movement imparted thereto by cam 34^x.

From the foregoing description it is seen that I am enabled to make four different stitches with this machine—that is to say, by employing adjustable feed I can make a long or short through-and-through stitch, as well

as a long or short alternately through-and-through and overcast stitch. Furthermore, the dog 30 can be thrown into or out of engagement with lever 22 while the machine is in operation, as well as the adjustment of the length of the stitch.

I have shown in Fig. 13 a modified construction for actuating the feed-roller 45 and by means of which I obviate the employment of the slide 38 and the accompanying parts. This construction consists in placing a gear-wheel 64 upon the shaft 65, carrying the feed-wheel 45 and mounting a cam 66 upon the upper end of the shaft 18, the pin or projection 16 being mounted upon the cam 66. Thus it will be seen that as the cam is rotated the gear-wheel 64 and feed-wheel 45 are moved the distance between two teeth on said gear-wheel 64 for every revolution of the cam.

In Figs. 14 and 15 I have shown means for adjusting the feed by employing a cam with interchangeable sections 67. The throw of the cam portion of different sections that may be employed may vary, so that, for instance, if the cam-section that is being used will move the gear-wheel 64 the space between two teeth by substituting therefor a section where throw will move the gear-wheel 64 the space between three teeth the feed is thereby correspondingly increased. As shown in Fig. 15, the inner portion of the section 67 rests upon the head of the shaft 18 and is secured thereto by a screw 68, while the sides of the section and the adjacent sides of the cam 66 are beveled or dovetailed in the manner shown.

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

1. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated on one side of the needle-path, and a pivotally-mounted gravitating member independent of said guide situated on the other side of the needle-path and adapted to intermittently press the carpet edges to one side of the needle-path.

2. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated on one side of the needle-path, a pivotally-mounted gravitating member independent of said guide situated on the other side of the needle-path and adapted to intermittently press the carpet edges to one side of the needle-path, and means for disconnecting said gravitating member and the device for vibrating the same.

3. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated on one side of the needle-path, a pivotally-mounted gravitating member independent of said guide situated on the other side of the needle-path and adapted to intermittently press the carpet edges to one side of the needle-path, a vibratory lever connected with

said vibratory member and the devices for vibrating the same, and means for disconnecting said lever and member.

4. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated on one side of the needle-path, a pivotally-mounted gravitating member independent of said guide situated on the other side of the needle-path and adapted to intermittently press the carpet edges to one side of the needle-path, a vibratory lever and devices for vibrating the same, and a dog connected with said member and having an open slot that engages said lever.

5. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated at one side of the needle-path, a pivotally-mounted gravitating bifurcated presser member situated in the rear of said guide and on the other side of the needle-path and a connection between said member and the driving mechanism of the machine for intermittently depressing said member.

6. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated at one side of the needle-path, a pivotally-mounted bifurcated gravitating presser member independent of said guide and situated on the other side of the needle-path, a lever connected with said presser member, said lever being situated in the path of a movable part of the machine and adapted to intermittently depress said member.

7. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide on one side of the needle-path, a pivotally-mounted gravitating presser member independent of said guide and situated on the other side of the needle-path and having dependent side pieces between which the edges of the carpet are adapted to enter, and means for intermittently depressing said member to press the edges of the carpet to one side of the needle-path.

8. In a carpet-machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated on one side of the needle-path, a pivotally-mounted gravitating presser member independent of said guide and situated on the other side of the needle-path, a lever connected with said presser member, and a cam carried by a rotatable part of the machine, said lever being situated in the path of said cam.

9. In a carpet-machine, a stitch-forming mechanism comprising sewing and feeding mechanism, a stationary guide situated at one side of the needle-path, a pivotally-mounted gravitating presser member independent of said guide and situated at the other side of the needle-path, a lever, means pivotally connected with said member for connecting and

disconnecting said lever and member, and means for vibrating said lever to intermittently depress said lever and member.

10. In a carpet-sewing machine, stitch-
5 forming mechanism, comprising sewing and feeding mechanism, a stationary guide situated on one side of the needle-path, a pivotally-mounted gravitating presser member independent of said guide and situated on the
10 other side of the needle-path, a lever, a dog movably connected with said member and with means for engaging said lever and by means of which it can be disconnected therefrom, and means for vibrating said lever to
15 intermittently depress said member.

11. In a carpet-sewing machine, stitch-forming mechanism, comprising sewing and feeding mechanism, a shaft having a feed and a ratchet wheel, a fixed guide-bracket,
20 a slide mounted upon said bracket and pro-

vided with a pawl engaging said ratchet-wheel, a rotatable cam adapted to engage said slide, and a lever pivotally mounted upon said guide-bracket and adapted to engage a shoulder on said slide to limit the movement thereof toward said cam. 25

12. In a carpet-sewing machine, a shaft having a feed and ratchet wheel, a slide provided with a pawl engaging said ratchet-wheel, a rotatable cam adapted to engage
30 said slide, a lever having a projection adapted to enter a socket in said slide to limit the movement thereof toward said cam, a fixed guide-bracket on which said slide is mounted and a spring secured to said bracket and acting upon said slide. 35

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