

No. 706,484.

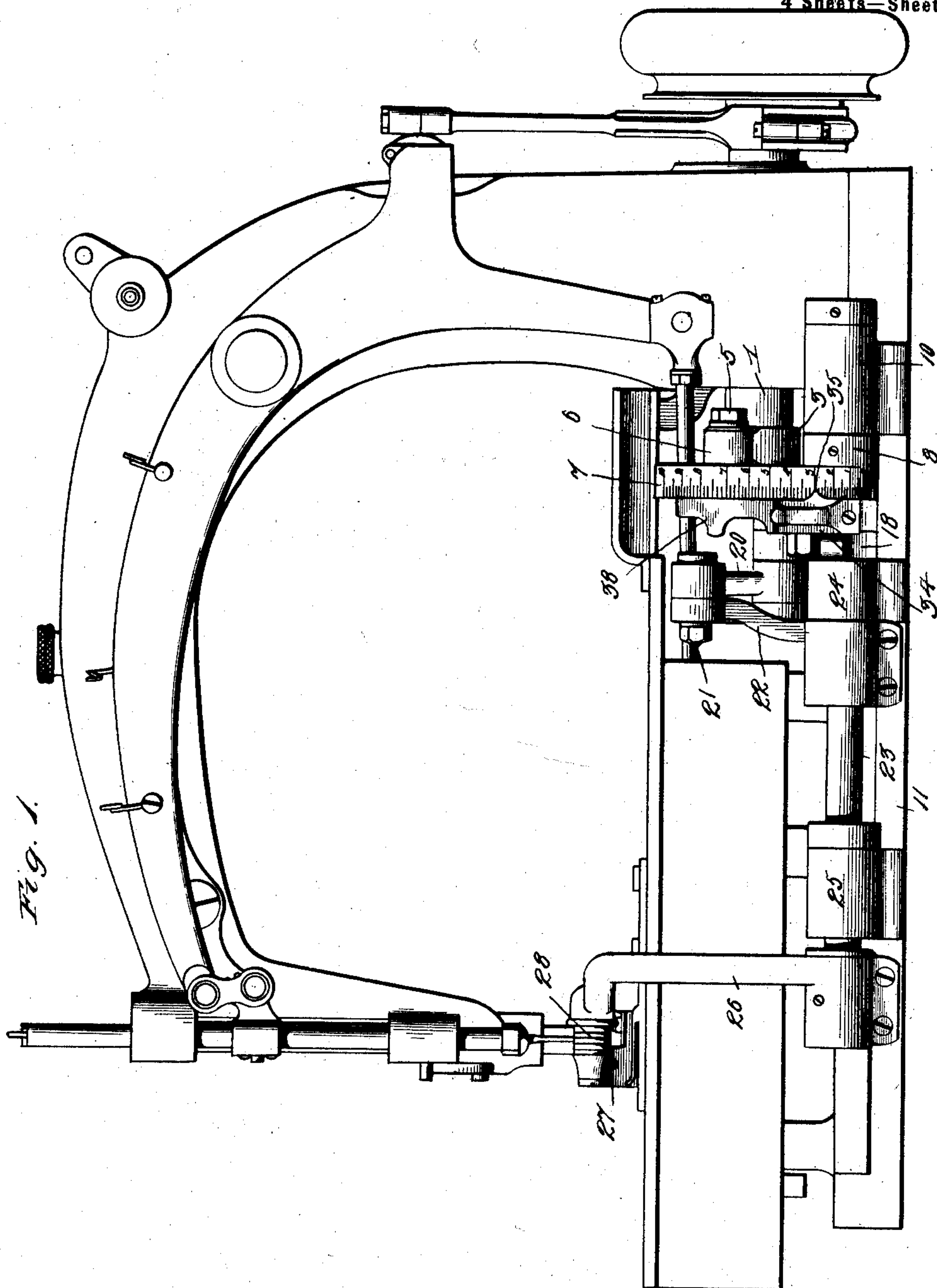
Patented Aug. 5, 1902.

R. G. WOODWARD.  
RUFFLING AND SEWING MACHINE.

(Application filed May 17, 1898.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses.

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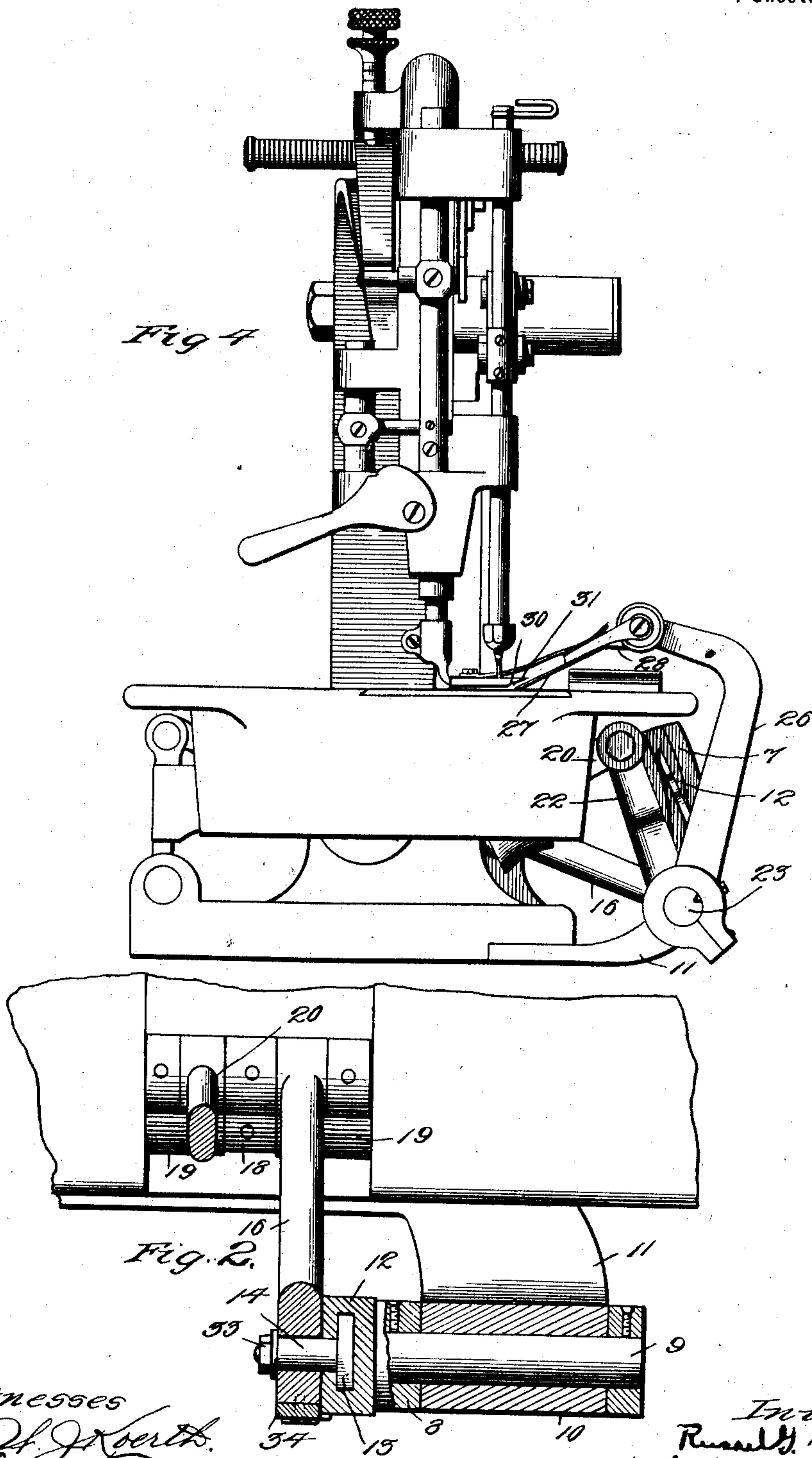
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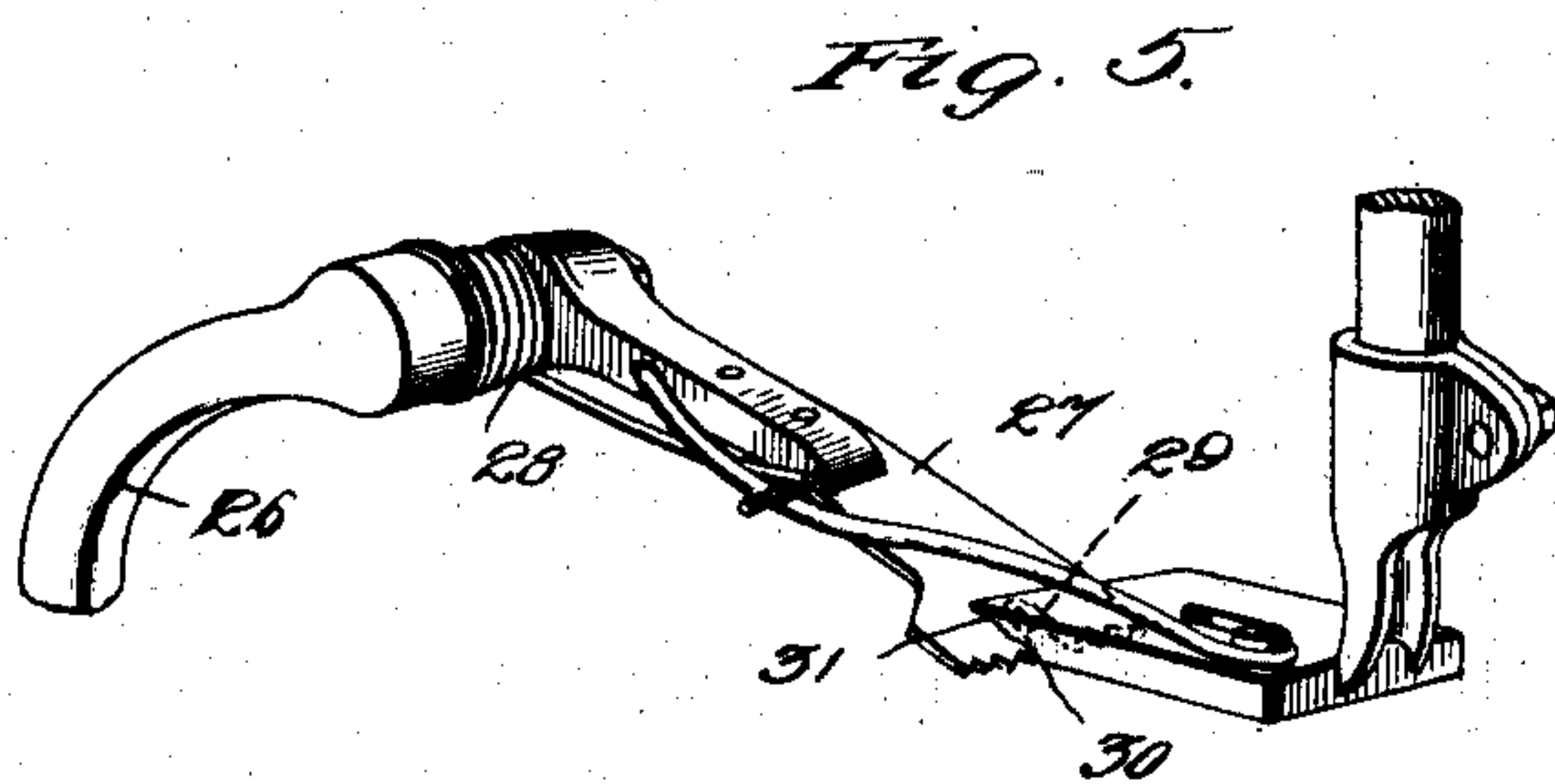
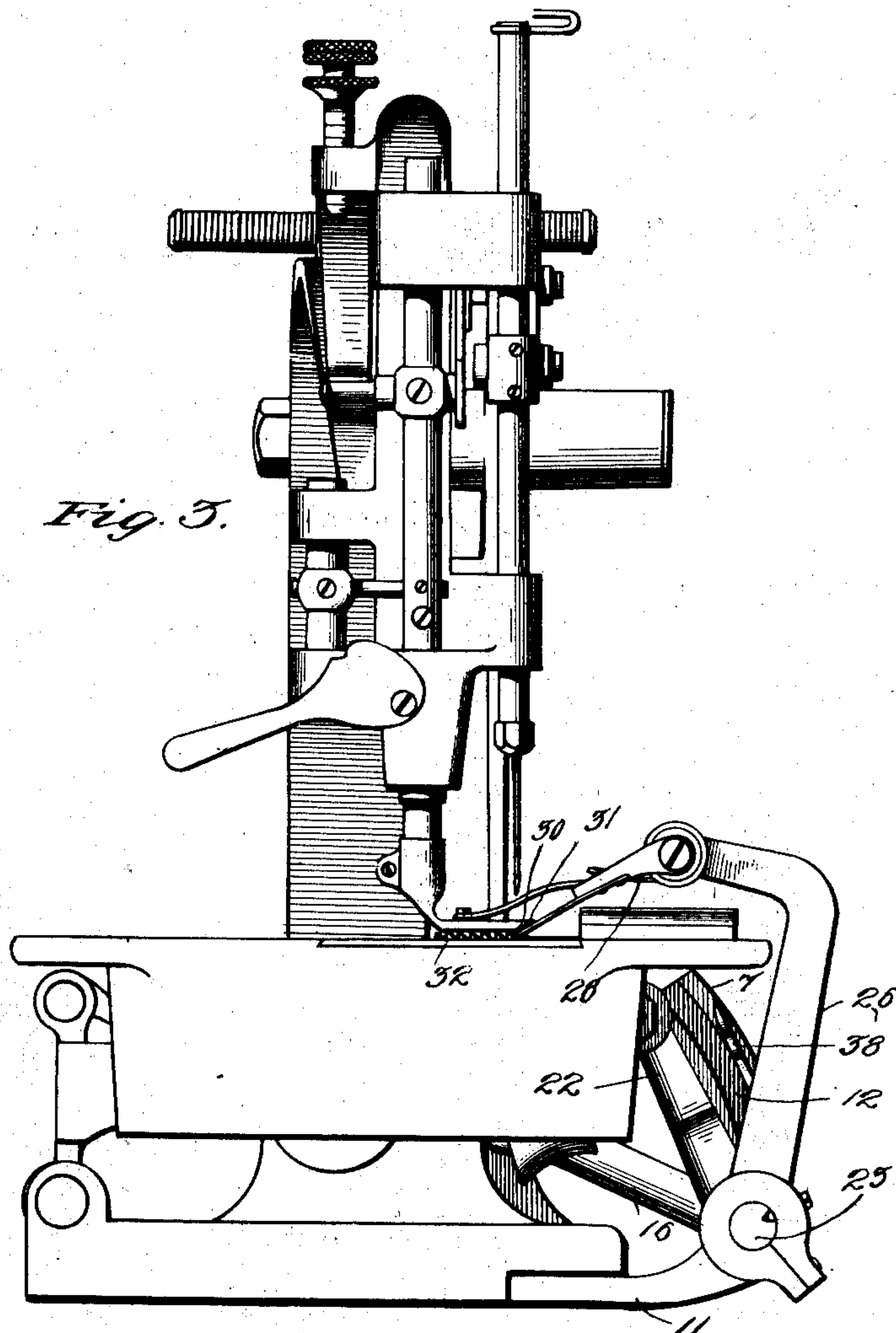
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(Application filed May 17, 1898.)

(No Model.)

4 Sheets—Sheet 3.



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No. 706,484.

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4 Sheets—Sheet 4.

Fig. 6.

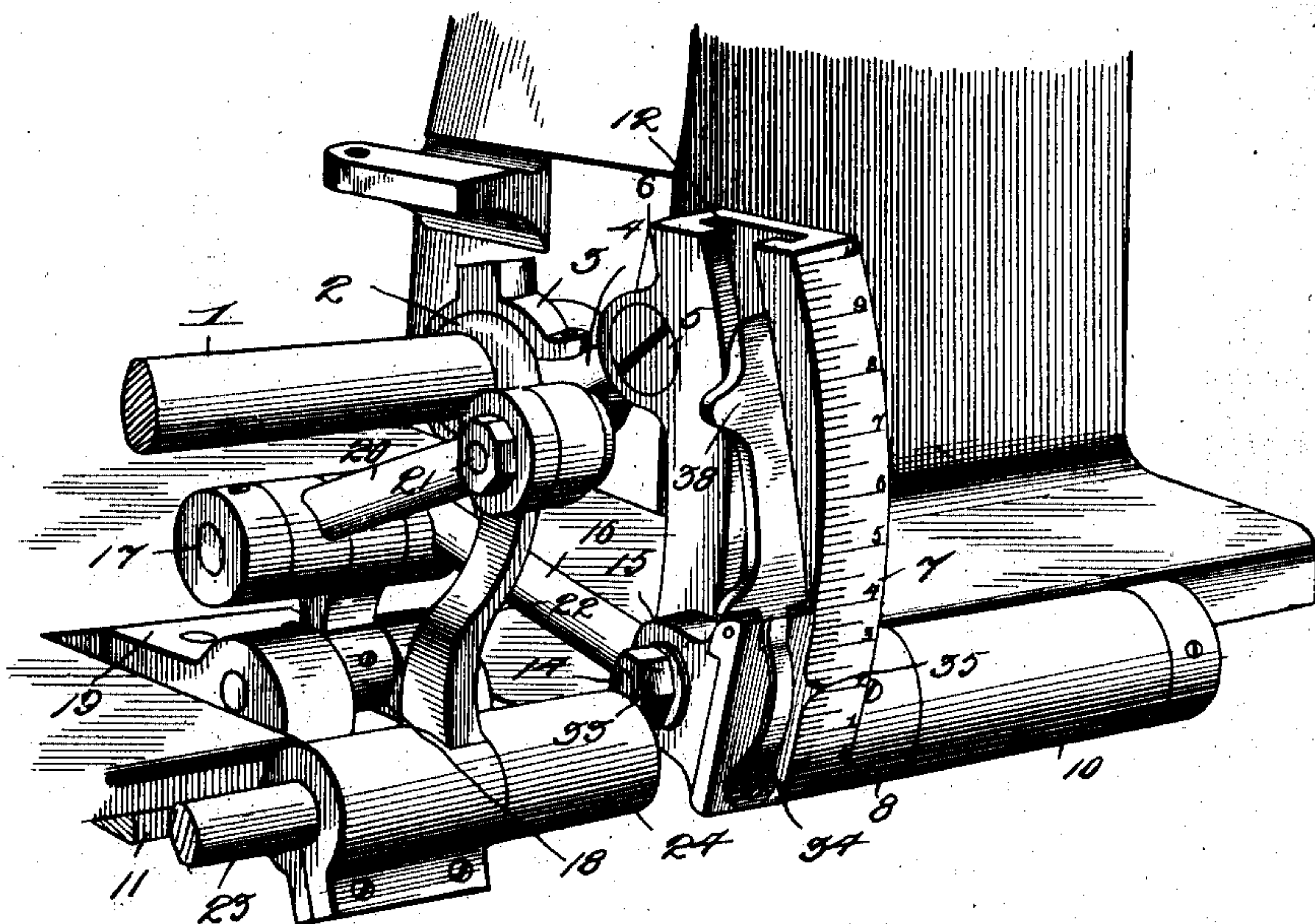
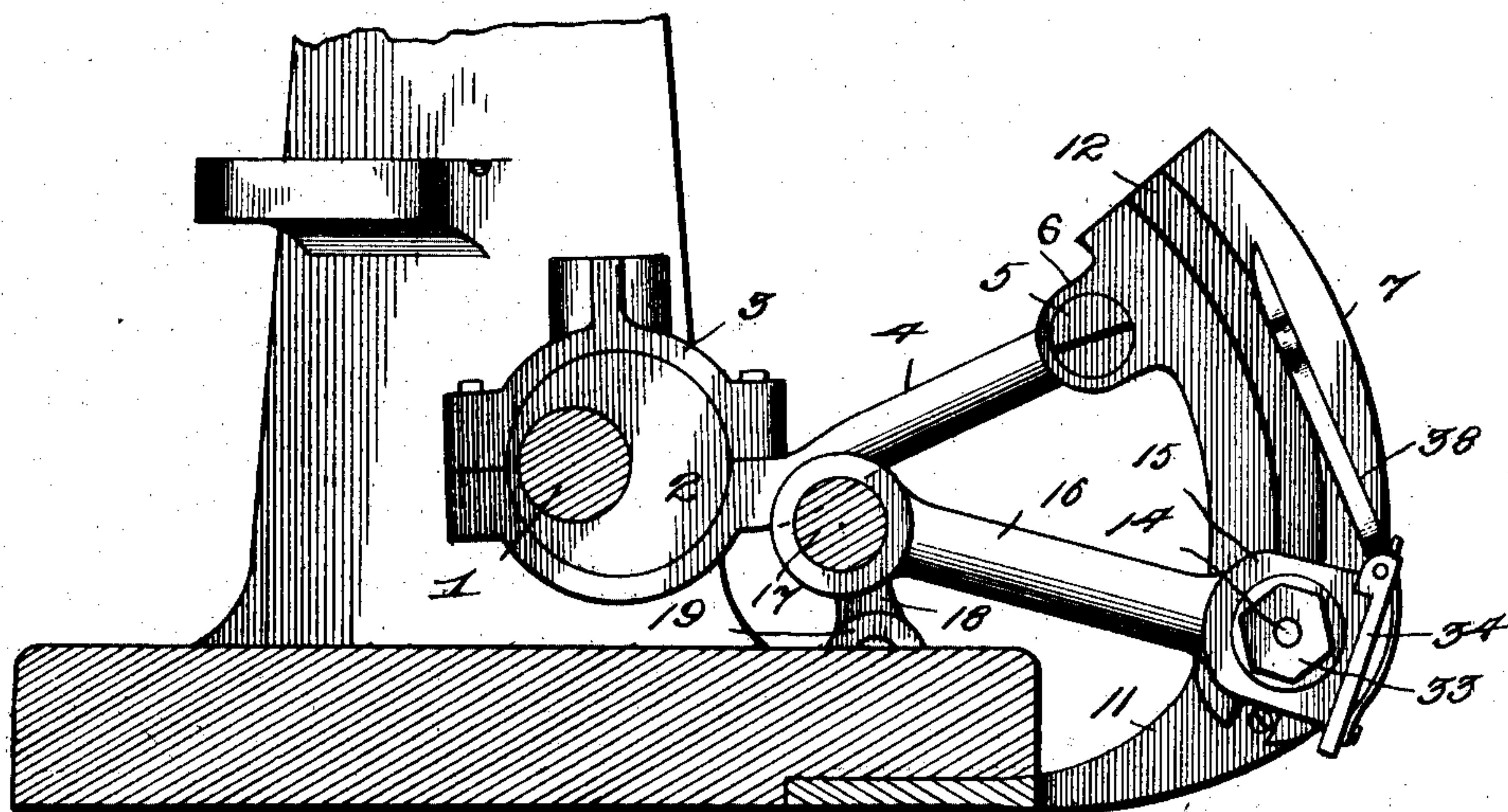


Fig. 7.



Witnesses

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# UNITED STATES PATENT OFFICE.

RUSSEL GREEN WOODWARD, OF WAUKEGAN, ILLINOIS, ASSIGNOR TO  
THE UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO,  
ILLINOIS, A CORPORATION OF ILLINOIS.

## RUFFLING AND SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 706,484, dated August 5, 1902.

Application filed May 17, 1898. Serial No. 680,971. (No model.)

*To all whom it may concern:*

Be it known that I, RUSSEL GREEN WOODWARD, a citizen of the United States, residing at Waukegan, in the county of Lake, State of Illinois, have invented certain new and useful Improvements in Ruffling and Sewing Machines, of which the following is a description, reference being had to the accompanying drawings and to the figures of reference marked thereon.

My invention relates to an improvement in sewing-machines, and especially to machines for ruffling and sewing, the object being to provide a machine wherein by mere adjustment ruffles of all sizes from the largest to the shadow ruffling may be successfully made.

The invention consists, primarily, of improved means for operating the ruffler-blade and providing for the necessary adjustments in a simple and effective manner, while, further, the invention consists in an improved arrangement and relationship of the ruffler-blade, feed presser-foot, and stripper-blade, whereby all danger of the ruffler-blade lodging or drawing back the goods or pulling out the gather in its backward movement is avoided, the action being further aided by the peculiar construction of the presser-foot.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a sewing-machine embodying the invention, a portion of the bed-plate being removed to show the parts for operating the ruffler. Fig. 2 is an enlarged view, partly in section, showing the manner of effecting the adjustment to vary the length of the ruffle. Fig. 3 is an end view of the machine, showing the relation of the parts as the feed is rising, the presser-foot, too, is rising, and the ruffler is moving forward beneath the end of the presser-foot. Fig. 4 is a similar view showing the parts as the feed is falling, the foot is falling, and the ruffler-blade is backing out. Fig. 5 is a detail view of the presser-foot. Fig. 6 is a perspective view of the operating parts, and Fig. 7 is an end view of the same.

In the drawings the machine illustrated is the well-known Union Special single-needle double-chain-stitch machine, and the parts

thereof need no explanation, the feeding mechanism, looper movement, and other parts of the sewing organization being of that familiar type.

The main or driving shaft of the machine is represented by the numeral 1, and in suitable position thereon is an eccentric 2, embraced by a strap 3 on the connecting-rod 4, as clearly shown in Fig. 7, which connecting-rod at its outer end is sleeved on a stud 5, secured to a projecting lug 6 on the curved arm 7, which has a sidewise-projecting collar 8 on its lower end secured on the shaft or pin 9, journaled in the lug 10 on the bracket 11, formed with the bed of the machine. The arm 7 has in the face toward the front end of the machine a T-slot 12, in which fits and is guided the squared head 13 of a stud or bolt 14, on which is sleeved the collar or head 15 on the end of the arm 16, which at the opposite end is sleeved on the pin or shaft 17, passing through and secured to the upper end of the link 18, pivoted to the bracket 19, sunk into the bed of the machine. It will be seen that the pivoted link, with the shaft 17, forms a rocking frame, the arm 20, sleeved on said shaft 17, being at its outer end sleeved on the rod or stud 21, secured to the upper end of the arm 22, clamped at its lower end on the rock-shaft 23, which rock-shaft is journaled in lugs 24 and 25 on the bracket 11. On the outer end of the rock-shaft is secured one end of the arm 26, which carries the ruffling-blade 27, pivoted thereto and held down to its work by the spring 28 in a manner well known. The ruffler-blade has a slot 29 to allow of the passage of the needle, the points of the ruffler-blade on either side passing beyond the plane of the needle. It will be seen that by this arrangement of the two independent rocking frames—the link operated from one and transmitting motion to the other—the parts can be so timed, by placing the eccentric properly on the driving-shaft, that the gathering of the goods is accomplished while the presser-foot is firmly clamping the goods against the throat-plate, so that when the needle is near its highest point the ruffler is receding and the feed is operating, the feed beginning to lower and letting the presser-foot down on



the goods to hold the latter just as the ruffler-blade is backing out from between the presser-foot and throat-plate, the ruffler moving back and forward again while the presser-foot is down.

To prevent any danger of dislodgment or shifting of the goods while the ruffler is receding, I provide the presser-foot with a groove 30 to receive the ruffled portion and a beveled part 31, which cooperate with the stripper-plate 32, the action being such and the parts being timed so that as the feed-drops and the presser-foot falls the fabric on the end of the ruffler-blade will be clamped between the end of the foot and the said stripper-plate, and thus the blade can back out of the ruffle, leaving the latter firmly held, so as to be caught by the stitches. By this arrangement a ruffle of minimum width may be sewed on this machine. To provide for proper setting of the machine for different widths of ruffles or gathers, the arm 7 has on its outer face an index, while the head or collar 15, pivoted on the bolt 14, the squared head of which bolt 14 is adjustable up and down in the slot 12 and secured in position by nut 33, is provided with a piece or plate 34, carrying a pointer 35 to register with the notches on the index. For convenience of the operator, to be used when a very slight ruffle is to be made and when the head 15 is near the lower limit of the slot 12, an extension 38 is pivoted on the head 15, which extension may be used as a pointer.

The rock-shaft 23 is provided with a V-shaped slot milled into its outer end, and the part 26, which is clamped around said rock-shaft, is provided with an opening for a set-screw, which passes through the end of said arm into the V-shaped slot, thereby insuring always the proper setting of the arm 26 on the rock-shaft.

Various minor modifications and changes in the construction of the apparatus may be made without departing from the spirit of my invention.

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

1. In a sewing and ruffling machine, suitable stitch-forming mechanism, a feeding device and a ruffling device including a ruffler-blade, a driving-shaft, a rock-shaft journaled on the bed of the machine beneath the work-plate and carrying a frame supporting the ruffler-blade which operates above said work-plate, a rocking frame journaled on the machine-frame with its axis, parallel with the first rock-shaft and operatively engaging the same, a second rocking shaft operatively engaging the rocking frame, and itself in operative engagement with the driving-shaft; substantially as described.

2. In a sewing-machine, and in combination, the driving-shaft and three rocking members journaled on the frame of the machine beneath the work-plate, one of said

members carrying a frame having an eccentric connection with the driving-shaft, a connection between said frame, and an arm on the second rocking member, a second arm on said second rocking member, in engagement with an arm on said third rocking member, said third rocking member having also an arm supporting a ruffler-blade; substantially as described.

3. In a sewing-machine, and in combination, the driving-shaft and the three rocking members journaled on the frame of the machine beneath the work-plate, one of said members carrying a frame having an eccentric connection with the driving-shaft, an adjustable connection between said frame and an arm on the second rocking arm, and a second arm on said second rocking member in engagement with an arm on said third rocking member, said third rocking member having also an arm supporting a ruffler-blade; substantially as described.

4. In a sewing and ruffling machine, in combination with the driving-shaft, a rock-shaft provided with an upwardly-extending arm with an eccentric connection between the upwardly-extending arm and the driving-shaft, a rocking frame, an arm secured thereto at one end and having its outer end at the front of the machine secured to the upwardly-extending arm of the first rock-shaft, and a second rock-shaft having an upwardly-extending arm to the upper end of which is secured one end of an arm which at its opposite end is attached to the rocking frame, said second rock-shaft being also provided with an arm supporting the ruffler-blade; substantially as described.

5. In a sewing and ruffling machine, in combination with the driving-shaft, a rock-shaft provided with an upwardly-extending arm with an eccentric connection between the upwardly-extending arm and the driving-shaft, a rocking frame, an arm secured thereto at one end and provided at its outer end with a head adjustable upon the upwardly-extending arm of the first rock-shaft, a second rocking shaft having an upwardly-extending arm, to the outer end of which is secured an arm attached at its lower end to the rocking frame, said second rocking shaft being also provided with an arm supporting the ruffler-blade; substantially as described.

6. In a sewing-machine having stitch-forming mechanism, and a feeding device, the herein-described mechanism for operating a ruffler-blade or like fabric-manipulating device comprising a driving-shaft, an eccentric thereon, a pivoted arm having a slot and operated from the eccentric on the driving-shaft, a link, an arm pivoted to the link, and adjustable within the slot, a rock-shaft supporting the ruffler-blade, and an arm secured to the same, and pivoted to the link; substantially as described.

7. In a sewing-machine having stitch-forming mechanism, and a feeding device, the here-



in-described mechanism for operating a ruf-  
fler-blade or like fabric-manipulating device  
comprising a driving-shaft, an eccentric there-  
on, a pivoted arm driven from the eccentric,  
5 a pivoted link, a rock-shaft supporting the  
ruffler-blade and connections between the  
link and the ruffler-blade-supporting shaft,  
said first pivoted arm being provided with a  
slot, and an arm pivotally secured at one end  
10 to the link and at its other end carrying a part  
adjustably secured within said slot; substan-  
tially as described.

8. In a sewing-machine having stitch-form-  
ing mechanism, and a feeding device, the here-  
15 in-described mechanism for operating a ruf-  
fler-blade or like fabric-manipulating device  
comprising a driving-shaft, an eccentric there-

on, a pivoted arm driven from the eccentric,  
a pivoted link, a rock-shaft supporting the  
ruffler-blade and connections between the 20  
link and the ruffler-blade-supporting shaft,  
said first pivoted arm being provided with a  
T-shaped slot, and an arm pivotally secured  
at one end to the link, and at its opposite end  
enlarged to form a head, and a bolt passing 25  
through said head, and having on its inner  
end a part sliding in said slot; substantially  
as described.

In testimony whereof I affix my signature  
in presence of two witnesses.

RUSSEL GREEN WOODWARD.

Witnesses:

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MASON TROWBRIDGE.