

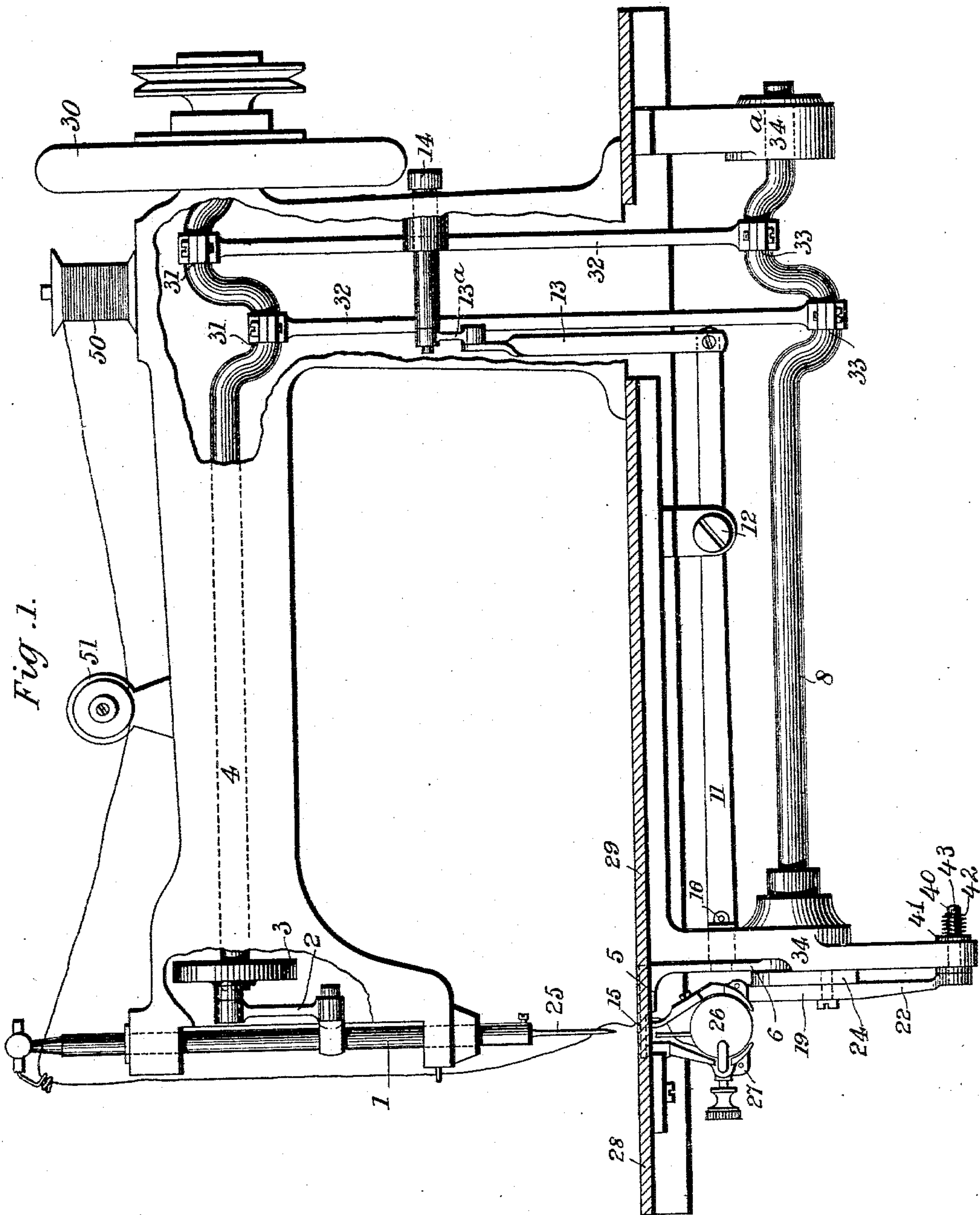
(No Model.)

4 Sheets—Sheet 1.

J. FLETCHER & C. BROWN.  
SEWING MACHINE.

No. 571,653.

Patented Nov. 17, 1896.



Witnesses.  
*J. B. Howard*  
*A. Hindle:*

Inventors.  
*Joseph Fletcher*  
*Charles Brown*

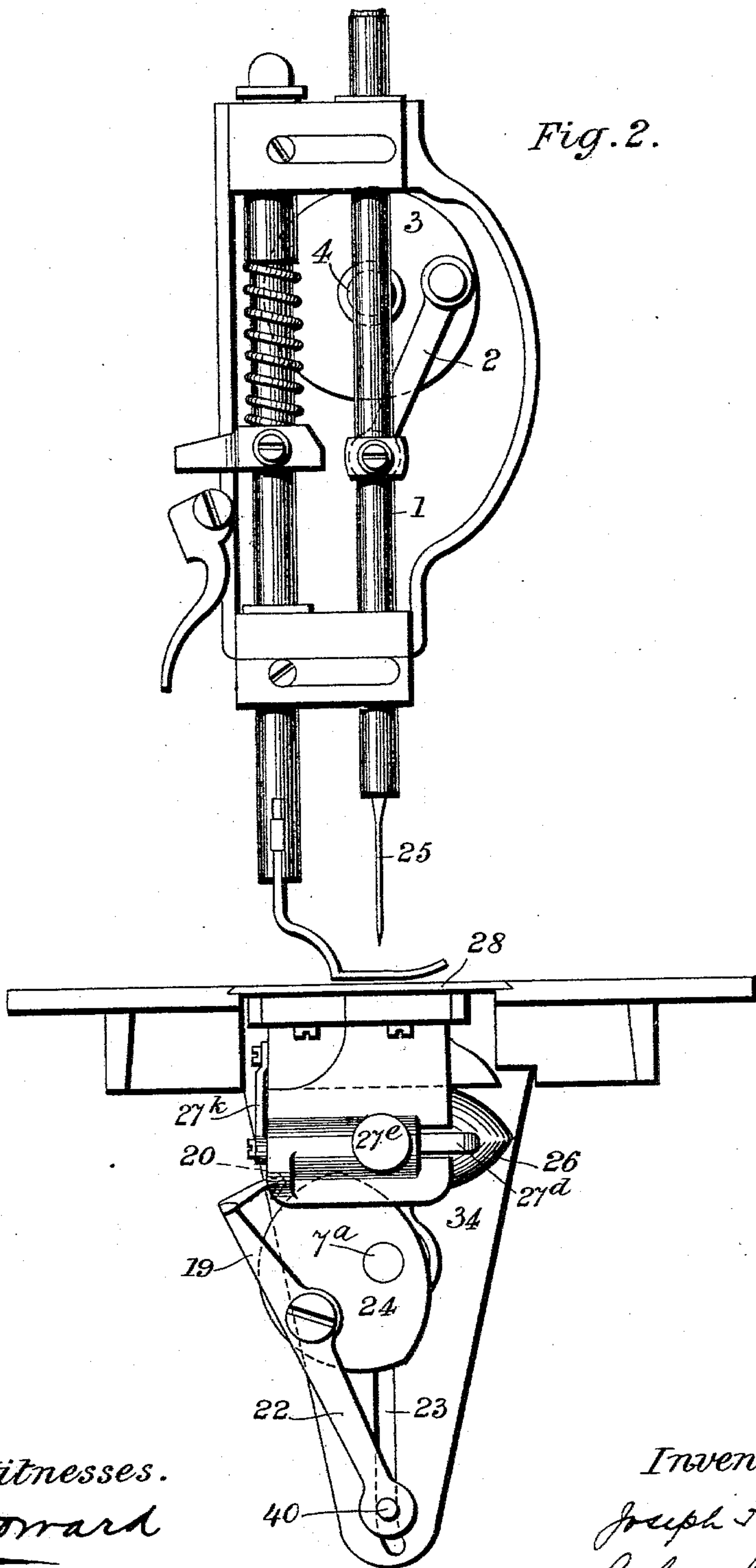
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J. FLETCHER & C. BROWN.  
SEWING MACHINE.

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Patented Nov. 17, 1896.



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*A. Hinkle*

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(No Model.)

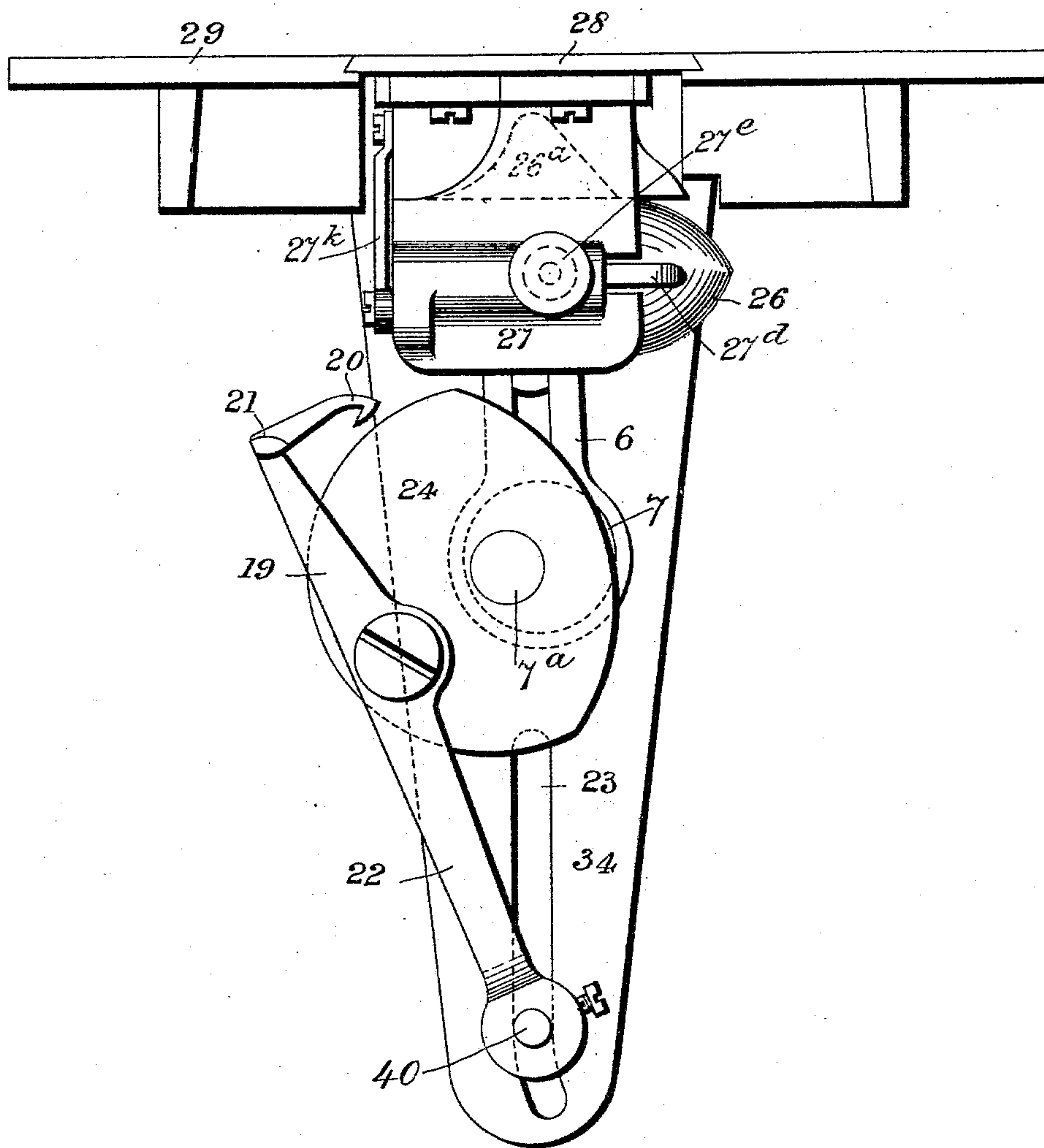
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Fig. 3.



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(No Model.)

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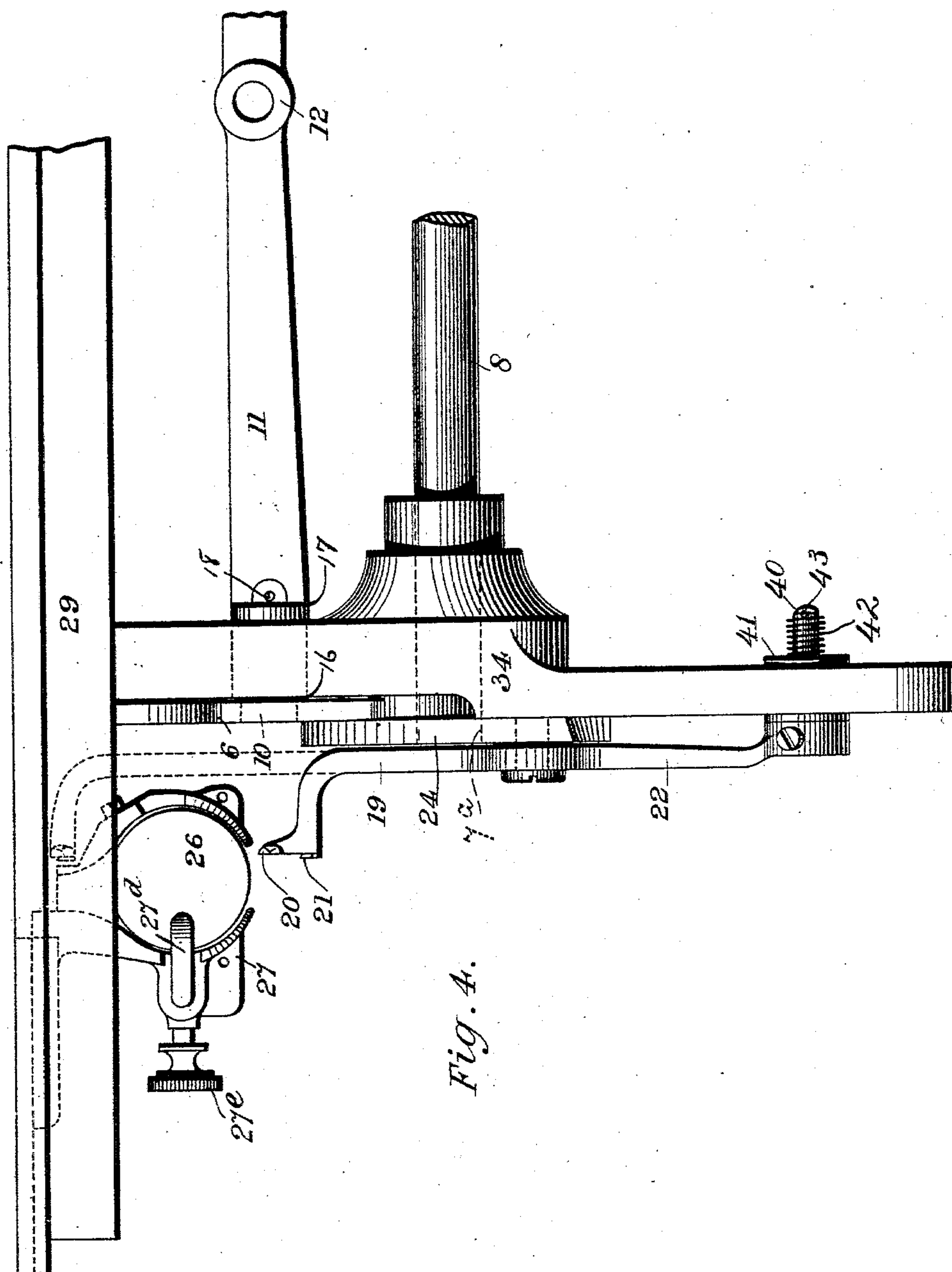


Fig. 4.

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Inventors  
*Joseph Fletcher*  
*Charles Brown*



# UNITED STATES PATENT OFFICE.

JOSEPH FLETCHER, OF CLAYTON-LE-MOORS, AND CHARLES BROWN, OF  
PRESTON, ENGLAND.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 571,653, dated November 17, 1896.

Application filed April 17, 1895. Serial No. 546,112. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH FLETCHER, residing at Clayton-le-Moors, and CHARLES BROWN, residing at Preston, in the county of Lancaster, England, subjects of Her Majesty the Queen of Great Britain, have invented a certain new and useful Improvement in Sewing-Machines, of which the following is a specification.

10 This invention relates to improvements in sewing-machines; and it consists of certain novel features hereinafter described and claimed.

15 Reference is had to the accompanying drawings, in which the same parts are indicated by the same numerals throughout the several views.

Figure 1 is a side elevation of an improved sewing-machine made in accordance with this invention, part of the frame being broken away in order to illustrate the invention more clearly. Fig. 2 is an end elevation of Fig. 1 on an enlarged scale. Fig. 3 is an end or front elevation of the reel carrier or case and thread-carrier on an enlarged scale. Fig. 4 is a side elevation of Fig. 3.

25 According to this invention the needle-bar 1 is operated by means of a link 2, one end of which is connected to the needle-bar 1 and the other end to a disk 3 or a crank on the end of the main driving-shaft 4.

30 The feed-dog 5, Fig. 1, is connected to a slotted lever 6, the lower end of which is carried on an eccentric 7 on the bottom shaft 8 of the machine. In the slot 9 of the lever 6 is a movable block or stud 10, carried in the end of a lever 11, pivoted at the point 12, the other end of the lever being, by connecting-links 13 13<sup>a</sup>, Fig. 1, attached to a shaft 14, by turning which the lever 11 can be moved on its fulcrum-stud at the point 12.

45 The movable block or stud 10 forms the fulcrum of the feed-dog 5, which is provided with the usual teeth 15, and the eccentric 7 gives the requisite up-and-down and to-and-fro motion to the same, a spring (not shown) attached to a stud on the under side of the plate 29 assisting it, and it will be seen that by turning the shaft 14 the position of the movable block or stud 10 can be changed in the slot 9, and the length of stitch so adjusted

and regulated. The movable block or stud 10 is carried on a stud 16, which stud 16 is received in a hole in the boss 17 on the end of the lever 11, so that the block 10 is at liberty to turn slightly with the lever 6. A pin 18, passed through the end of the stud 16, keeps the latter in place.

The looper, Figs. 1, 2, 3, and 4, consists of a barbed hook 20 and a shoulder 21, carried by a lever 19, the lower end 22 of which is free to slide in a slot 23 in a bracket 34, which allows of an up-and-down motion as well as the requisite to-and-fro or sweeping partly circular motion of the looper, such motion being given by means of a disk or crank 24, carried by a stud 7<sup>a</sup> on the eccentric 7.

The slot of the bracket 34 is curved at its lower end for the purpose of giving a smooth movement to the looper, it having been found that a straight slot produces a jerk or irregular motion when pin 40, carried by the end 22 of the looper, reaches the bottom of the slot, which motion is avoided by curving the end of the slot, as the pin of the looper is drawn to one side when it arrives at the end of the slot, and thus prepares the looper easily and gradually for its upward or return movement. To take up wear on the faces of the bracket, the pin 40 after passing through the slot is provided with a washer 41, upon which presses a spring 42, a pin 43 serving to hold the spring in place and also to hold the looper closely to the bracket notwithstanding any slight wear which may take place on the front and back faces of same. As shown in the drawings, the outline given to the disk or lever 24 is that of a cam, but this is only used when a cam edge is required for operating a special attachment forming no part of the present invention.

At 30 is a wheel driven by hand or power, and this in turn drives the main shaft 4 and needle-bar 1, as hereinbefore described. On the shaft 4 is a double crank 31 31, connected by links 32 32 to corresponding double cranks 33 33 on the bottom shaft 8, which is carried in the brackets 34 34<sup>a</sup>, cast to the under side of the bed-plate 29.

The upper thread is drawn from the reel and passes over a tension device 51, and from thence in the usual way to the eye of the



needle. When the needle takes the thread through the opening in the bed-plate, the hook 20 of the looper is brought into position above the reel-case frame 27 on the side exposed, as shown in dotted lines in Fig. 4, and takes hold of the thread close to the needle, the thread slipping in a loop right over the hook 20 and being caught by the shoulder 21. The circular motion of the looper being continued, the loop is drawn over the pointed end of the case 26 and carried underneath to the back of same where the hook 20 leaves the loop and is ready to repeat the operation. The lever 19, carrying the hook 20, will take up all the slack in the thread and thus no other take-up will be necessary.

What we claim is—

In combination the plate 29, bracket 34 depending from same, a long slot in said bracket having a curved lower end, the looper, a disk

24, a pin carried by said disk on which the looper is pivoted, a pin 40 carried by the end of the looper and passing through the slot, a washer 41 on said pin, a spring pressing against said washer, means for retaining the spring on the pin and thus holding the looper to the slot, and means for rotating the disk, whereby the looper is operated, the curved slot imparting a smooth action to the looper and the spring enabling wear on the faces of the bracket to be taken up, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOSEPH FLETCHER.  
CHARLES BROWN.

Witnesses:

J. B. HOWARD,  
A. STINDLE.