

No. 660,927

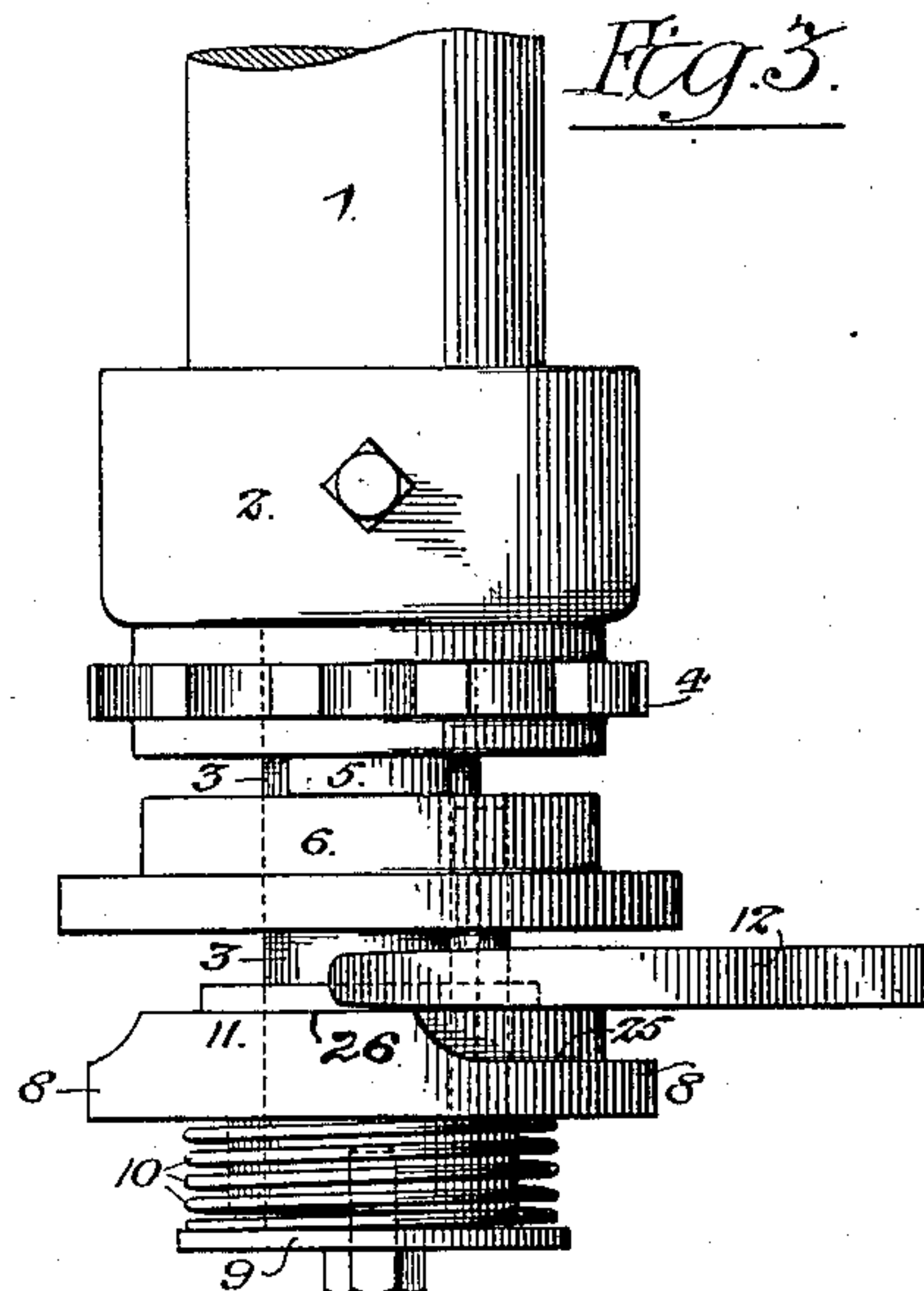
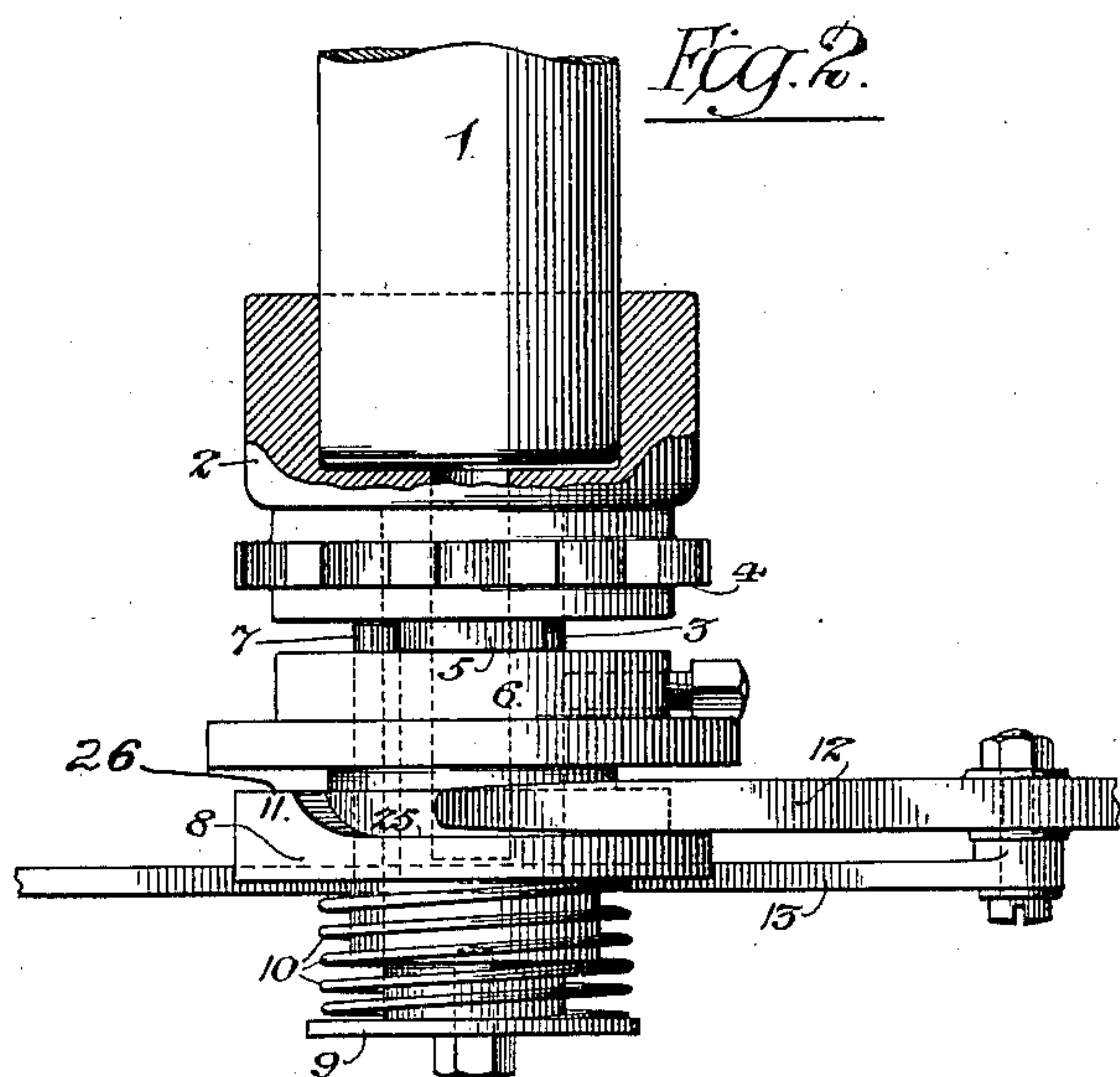
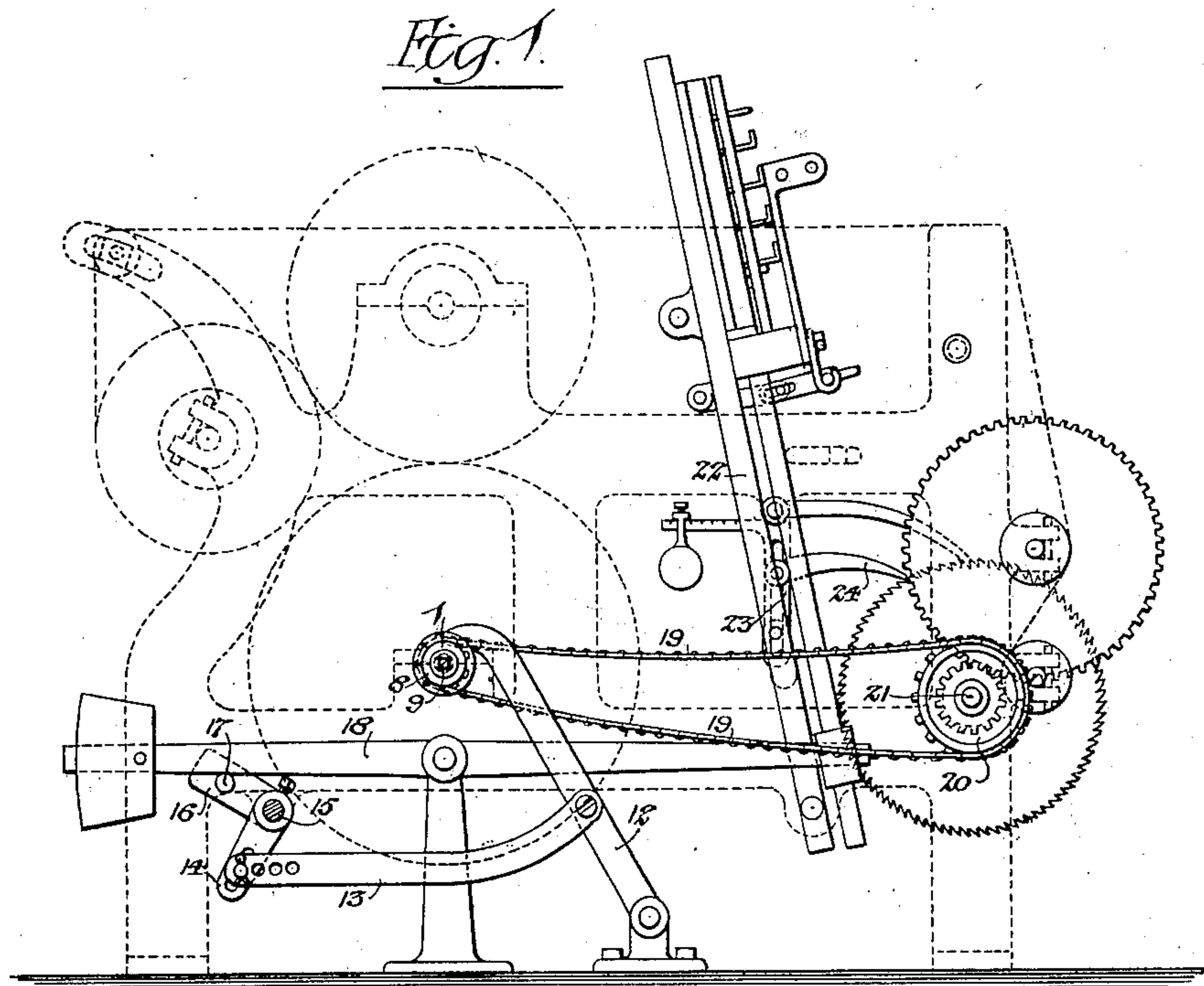
Patented Oct. 30, 1900.

T. ROWCROFT.

FRINGE PULLING DEVICE FOR LOOMS.

(Application filed Mar. 30, 1900.)

(No Model.)



Witnesses:-

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UNITED STATES PATENT OFFICE.

THOMAS ROWCROFT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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FRINGE-PULLING DEVICE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 660,927, dated October 30, 1900.

Application filed March 30, 1900. Serial No. 10,762. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ROWCROFT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Fringe-Pulling Devices for Looms, of which the following is a specification.

The object of my invention is to provide simple and efficient means whereby a rapid
10 movement of considerable extent may be automatically imparted to the take-up roll of a loom, so as to draw off warp in quantity sufficient to form a fringe of any desired length, thereby dispensing with the necessity of oper-
15 ating the take-up roll by hand for this purpose and rendering unnecessary any stoppage of the loom or the picking out of the shoots of weft-thread that would be inserted during the drawing of the fringe by hand if
20 the loom was not stopped.

In the accompanying drawings, Figure 1 is a side view of sufficient of a loom to illustrate the application of my invention thereto, the loom-frame being shown by dotted lines; and
25 Figs. 2 and 3 are plan views, on a larger scale, representing in their two different positions the parts to which my invention particularly relates.

The main shaft of the loom is represented
30 at 1, and to this shaft is secured a collar or hub 2, said hub having a projecting spindle 3, on which is loosely mounted a sprocket-wheel 4, having at one side a projecting lug 5, this sprocket-wheel being longitudinally
35 confined between the hub 2 and a disk 6, which is secured to the spindle 3 and has a transverse opening for the guidance of a pin 7, carried by and projecting from a disk 8, which is free to slide upon the spindle 3.

At the end of the spindle 3 is a disk or
40 plate 9, and between said plate and the disk 8 is interposed a coiled spring 10, the tendency of which is to thrust the disk 8 inwardly on the spindle 3, so as to bring its pin 7 into
45 engagement with the lug 5 on the sprocket-wheel 4. On the disk 8, however, is a cam-flange 11, and mounted at some convenient point, so that its free end can engage with this cam-flange 11, is a pivoted lever 12, which
50 is connected by a link 13 to an arm 14 on a rock-shaft 15, the latter being mounted in

suitable bearings on the loom and having another arm 16, which has a pin 17 for engagement with the lever 18 of the shuttle-box mechanism of the loom. The sprocket-wheel
55 4 receives a chain belt 19, which likewise engages with a sprocket-wheel 20 on the shaft 21, which carries one of the wheels of the train, whereby the take-up roll of the loom receives intermittent movement from the vibrat-
60 ing lay 22 through the medium of the lever 23 and pawl 24. Normally the lever 12 occupies the position shown in Fig. 3, its upper end engaging with the straight face 26 of the cam-disk 8, so as to hold the latter outwardly on the
65 spindle 3 and withdraw the pin 7 from engagement with the lug 5 on the sprocket-wheel 4. Hence the latter is free to turn as the take-up roll of the loom is intermittently operated by
70 the usual take-up gearing above described. When, however, it is desired to form a fringe upon the fabric which is being woven, excessive movement is imparted to the shuttle-box lever 18, the movement contemplated in the
75 device illustrated in the drawings being a downward movement of that end of the lever which engages with the pin 17. This movement has the effect of rocking the shaft 15 in
80 such a manner as to lift the upper end of the lever 12 out of engagement with the straight face 26 of the disk 8, and the latter is thereupon, under the influence of the spring 10,
moved inwardly on the spindle 3, so as to bring its pin 7 into position to engage with
85 the lug 5 of the sprocket-wheel 4, as shown in Fig. 2, and thus impart rotating movement to the latter and to the shaft 21 and take-up roll, this movement continuing as long as the upper end of the lever 12 is held free from
90 engagement with the straight face 26 of the cam-disk 8. As soon, however, as the shuttle-box lever 18 is operated, so as to raise that end of the same which is in engagement with
95 the pin 17, the upper end of the lever 12 will fall into engagement with the cam-face 25 on the disk 8 and will thereby cause the outward movement of said disk 8 on the spindle 3, so
100 as to withdraw its pin 7 from engagement with the lug 5 of the sprocket-wheel 4, and the rapid movement of the take-up roll is thereby arrested. As soon as the disk 8 has
by the action of the upper end of the arm 12

upon the cam-face 26 of said disk been pushed outwardly to the extent shown in Fig. 3 the lever 12 engages with the straight face 26 of said cam-disk and retains the latter in the
5 outward position until there is a further operation of the lever 12 in order to again release the disk. The movement of the take-up roll necessary to draw out the proper amount of warp-threads to form a fringe is
10 thus effected automatically and without any stoppage of the loom, and the rotative movement of the take-up roll is so rapid that the necessary amount of warp to form the fringe will be drawn off in so short a time as to prevent the introduction of a number of shoots
15 of weft to be afterward removed, as when the fringe is drawn slowly forward by hand without stopping the loom.

The lug 5 of the sprocket-wheel 4 and the
20 pin 7 of the disk 8 constitute, in effect, the engaging members of a clutch, and other forms of clutch may be used without departing from the essential features of my invention. When the pin is employed, the disk 6
25 serves to support the pin close up to the engaging end of the same, and thereby prevents the bending or distortion of the pin, which might otherwise occur.

I have shown and described the spring 10 as
30 intended to force the clutch elements into engagement with each other and the lever 12 and cam-flange 11 as effecting separation of said clutch elements; but it will be evident that a reverse construction may be employed
35 if desired—that is to say, the spring may tend to draw the clutch elements out of engagement and the lever and cooperating flange may thrust them into engagement. A weighted lever or equivalent yielding pressure device
40 may also take the place of the spring.

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

1. The combination in a loom, of the take-up
45 roll, means for driving the same from one of the power-shafts of the loom, a clutch whereby said driving device may be rendered

operative or inoperative, and means for throwing said clutch into or out of action, said means comprising a lever for acting on the
50 clutch, a lever forming part of the shuttle-box mechanism of the loom, an intermediate lever acted upon by said shuttle-box lever, and a positive connection between said intermediate lever and the lever which acts upon
55 the clutch, substantially as specified.

2. The combination of the take-up roll, a driving-wheel therefor on one of the power-shafts of the loom, said driving-wheel carrying one member of a clutch, a disk rotating
60 with but movable longitudinally on said shaft, and carrying the other member of said clutch, a yielding pressure device for moving said disk in one direction, a lever engaging with a cam-flange on the disk to move it in
65 the opposite direction, and means under control of a moving element of the loom for throwing said lever into and out of engagement with the cam-flange of the disk, substantially as specified.
70

3. The combination of the take-up roll of a loom, a driving device therefor mounted on one of the power-shafts of the loom and having a projecting lug, a cam-disk turning with
75 said shaft but movable longitudinally thereon and having a projecting pin for engagement with said lug, a disk interposed between the cam-disk and the driving device and serving as a guide and support for said pin, a
80 yielding pressure device for moving the cam-disk in one direction, a lever for engagement with the cam-flange on the disk to move it in the opposite direction, and means under control of a moving part of the loom for throwing
85 said lever into and out of engagement with the cam-flange of the disk, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOS. ROWCROFT.

Witnesses:

ROBT. G. WHITE,
F. E. BECHTOLD.