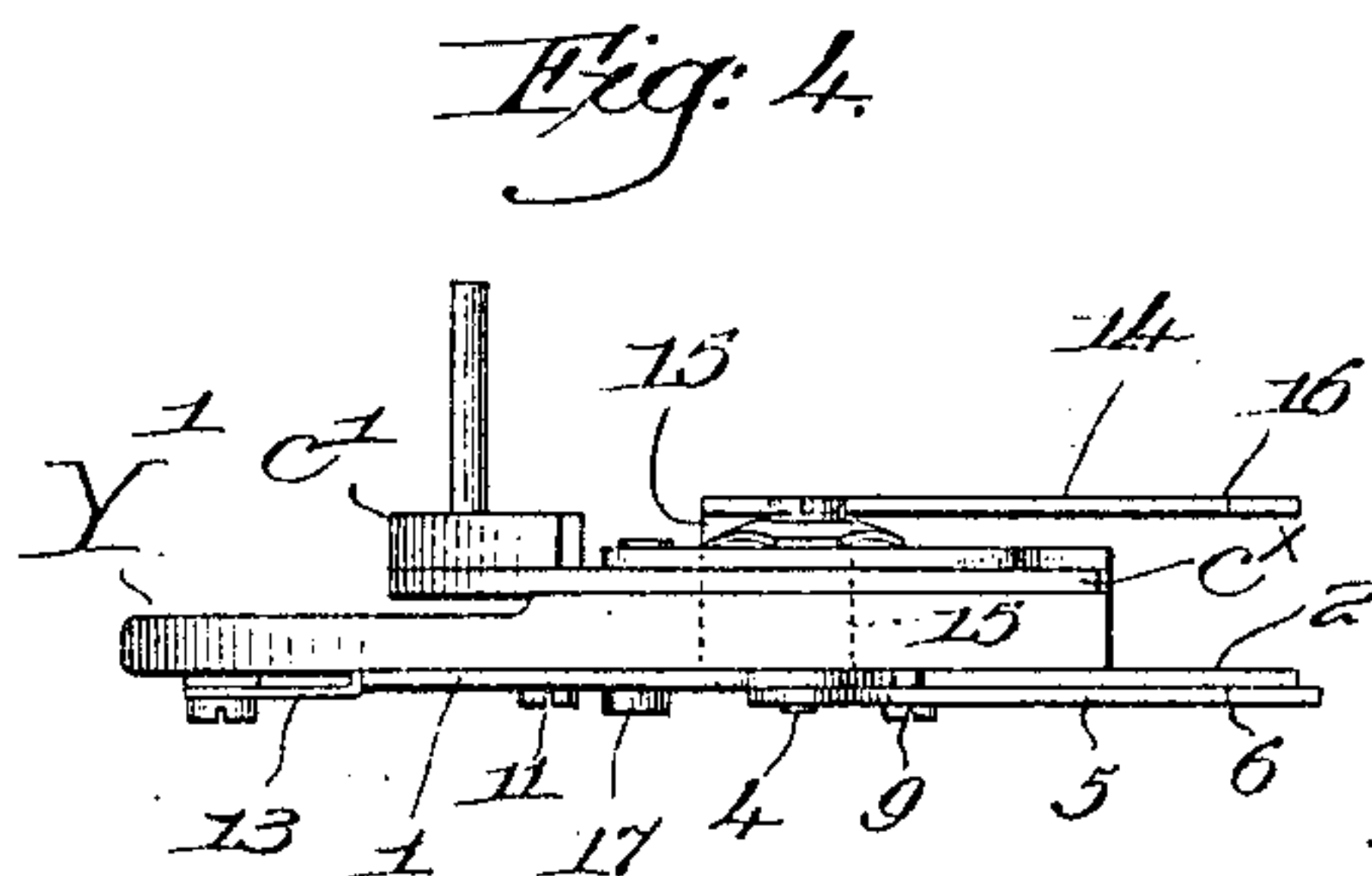
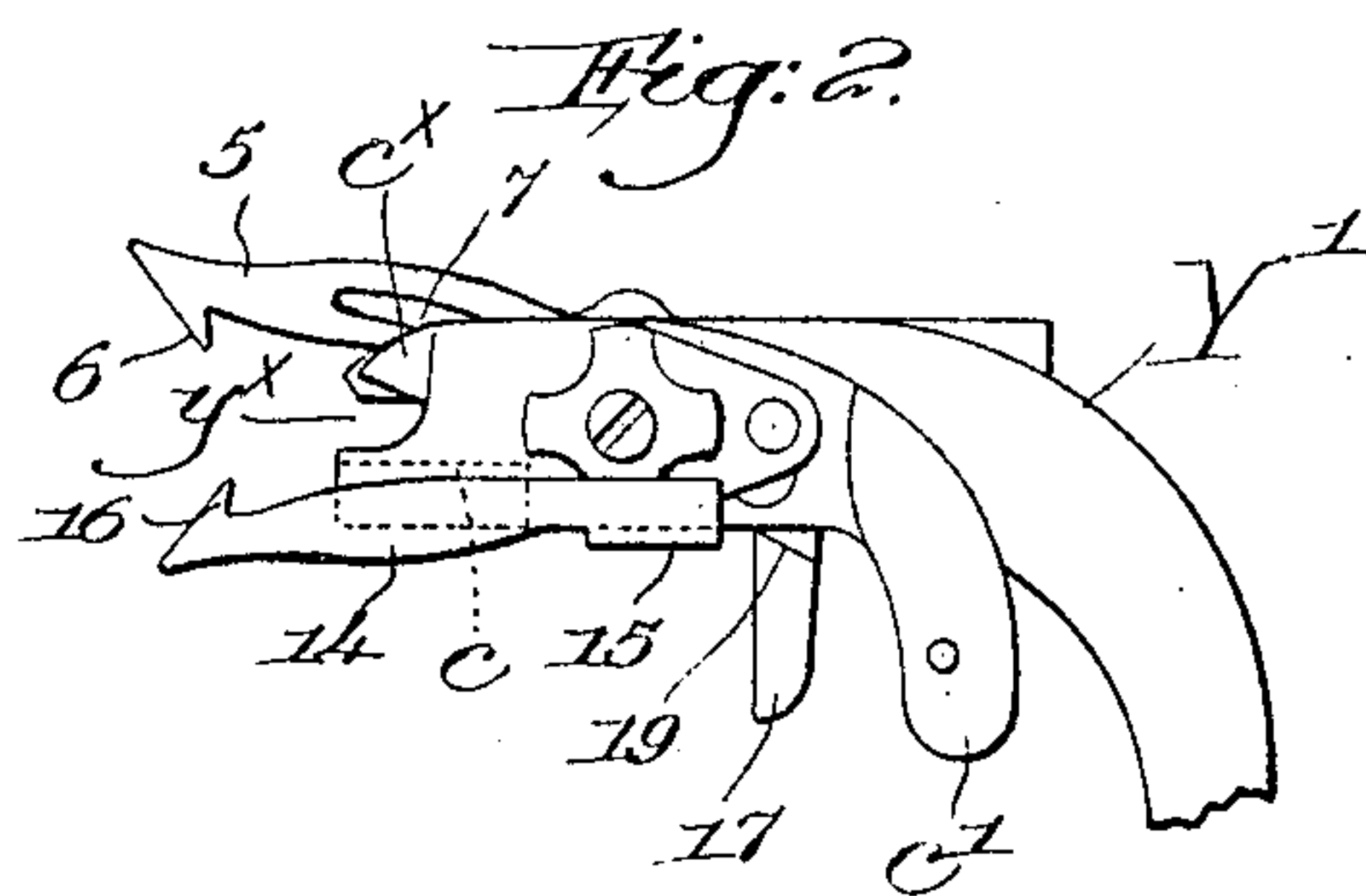
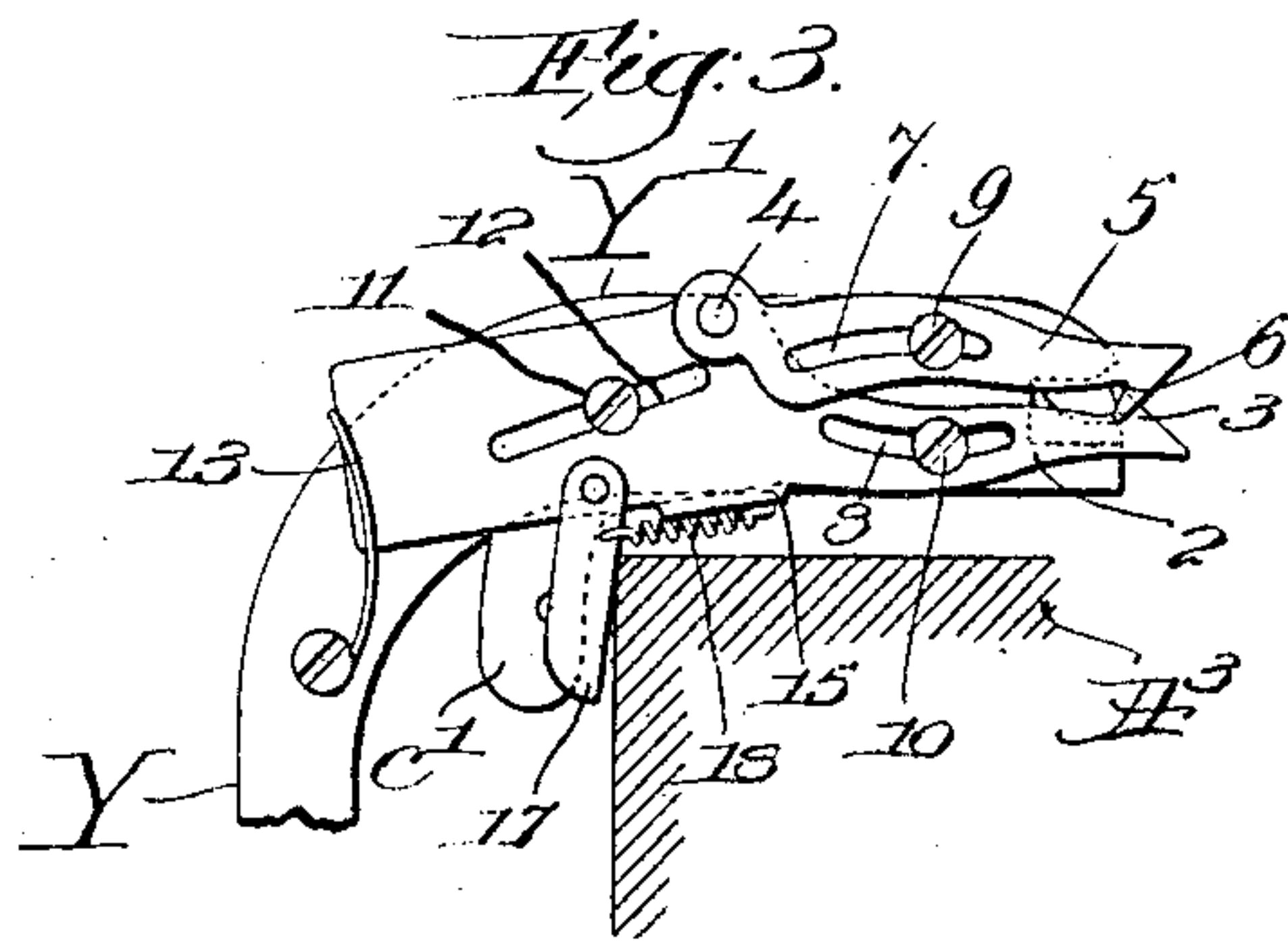
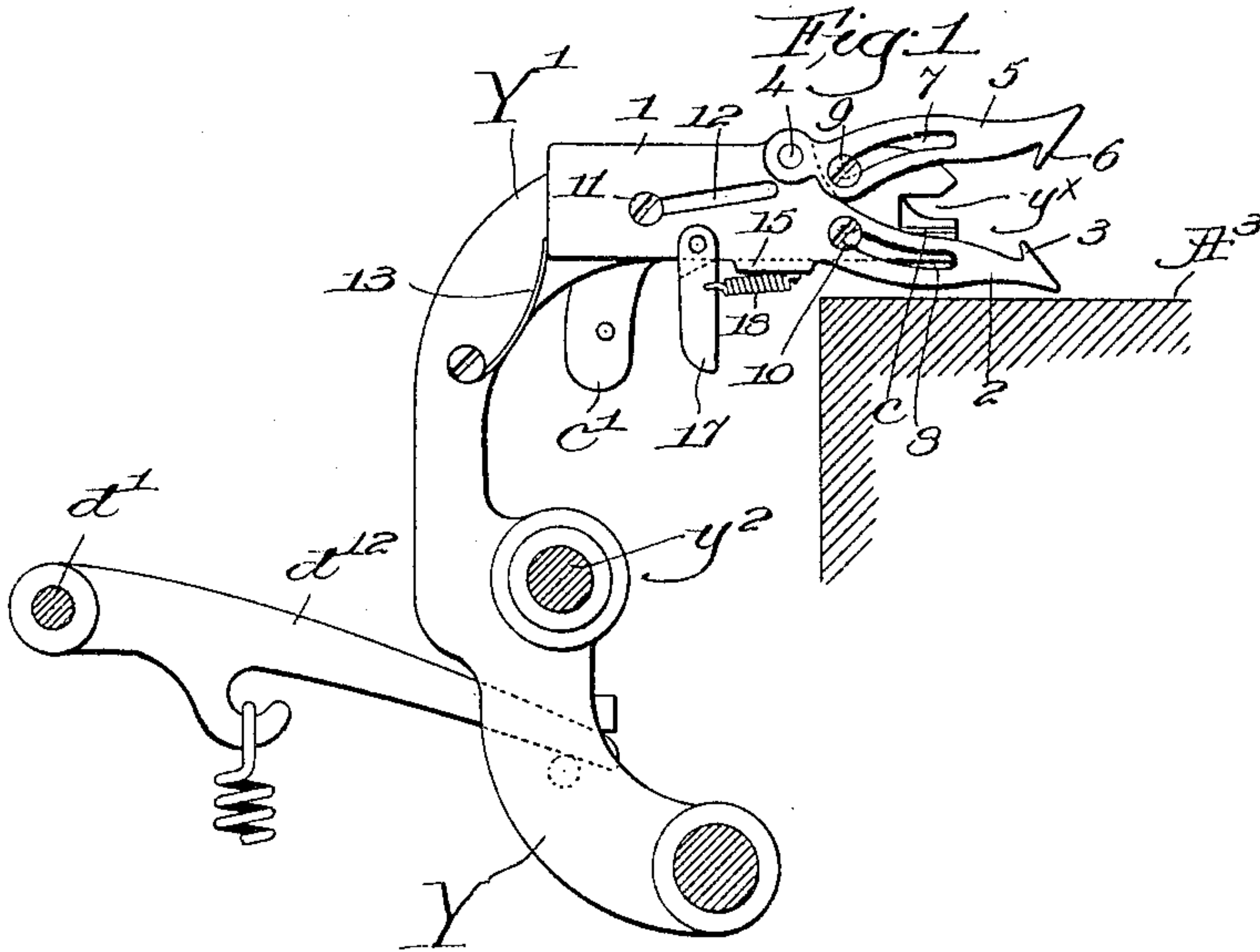


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 THREAD PARTING MECHANISM FOR LOOMS.
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943,957.

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UNITED STATES PATENT OFFICE.

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THREAD-PARTING MECHANISM FOR LOOMS.

943,957.

Specification of Letters Patent.

Patented Dec. 21, 1909.

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To all whom it may concern:

Be it known that I, WILLAM H. SPENCER, a citizen of the United States, and resident of Methuen, county of Essex, State of Massachusetts, and ALFRED HURST, a citizen of the United States, and resident of Lawrence, county of Essex, State of Massachusetts, have invented an Improvement in Thread-Parting Mechanism for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to thread-parting mechanism especially adapted for use on looms arranged to replenish automatically the running filling prior to complete exhaustion of the supply in the working shuttle.

In such looms means is provided to sever the old filling end close to the shuttle by a parting device mounted on the shuttle-feeler, and a temple thread-cutter parts the filling end adjacent the edge of the cloth, such equipment being shown in United States Patent No. 683,423 granted to Draper September 24, 1901.

Should the old filling end slacken at the time the parting device on the shuttle-feeler operates, or otherwise fail to be severed, it is very apt to be caught and carried back into the cloth by the new filling, making a bad place in the cloth.

Our present invention relates to thread-parting mechanism of the general type referred to and it has for its object the production of novel and efficient means to assume automatically control of the filling end to be parted and to positively and surely effect the proper positioning thereof to be acted upon by the parting device on the shuttle-feeler.

We have illustrated our invention in connection with a thread-parting device carried by the shuttle-feeler, for use in connection with a loom in which the running shuttle is provided automatically with fresh filling at the required time.

The various novel features of our invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a transverse sectional view of part of a loom of the automatic filling-replenishing type, with a thread-parting in-

strumentality embodying our invention mounted on the shuttle-feeler, the parts being shown just before the thread engaging and positioning means is operated; Fig. 2 is an opposite side elevation of the upper end of the shuttle-feeler and the parts mounted thereon, in the same position shown in Fig. 1; Fig. 3 is a view similar to Fig. 1, but showing the thread positioning means as having partially-operated and with the thread-parter about to operate; Fig. 4 is a top plan view of the upper end of the shuttle-feeler and the parts mounted thereon.

A³ is the lay, Figs. 1 and 3, and said lay, together with the upturned arm Y bent rearwardly at its upper end at Y' to constitute a shuttle-feeler and notched at y^x; the lateral stud y² on the arm, (shown in section Fig. 1) and the arm d¹² fast on the controlling rock-shaft d' and governing the movement of the shuttle-feeler to operative position, may be and are all of well-known construction.

The parting device mounted on the feeler and comprising the fixed and movable blades c, c^x and the heel c' on the movable blade, to be struck by the lay and thereby close said blades to part the filling end, are also well known and substantially as in the patent referred to.

When the shuttle-feeler is moved to operative position, Figs. 1 and 2, to extend across the lay as the latter beats up the old filling end should enter the notch y^x in order to be severed clearly and with certainty when the parting blades are closed upon it.

Should the filling end be slack it would in many instances fail to be acted upon and parted by the blades, and the means invented by us to prevent such failure will now be described.

Upon one side of the shuttle-feeler we mount a jaw-carrier, shown as a flat metal plate 1, provided at its rear end with an extension 2 having a hooked end 3 and constituting a thread-engaging or catching jaw, adapted to pass beneath the old filling end, and at 4 upon the jaw-carrier we mount a relatively movable upper jaw 5, hooked at 6 and adapted to pass above the filling end.

As shown the free ends of the jaws are flared or beveled beyond the hooked portions to better pass under and over the thread, respectively, the hooks of the jaws being arranged to overlap, see Fig. 3, when

the jaws are closed, to positively entrap the thread.

Cam slots 7, 8 are made in the jaws, to receive the shanks of headed guiding and retaining studs 9, 10 fixed in the side of the shuttle-feeler, and a similar stud 11 passes through a diagonal slot 12 in the jaw-carrier. A light spring 13 acts upon the latter and normally tends to slide it rearward on the shuttle-feeler into the relative position shown in Figs. 1 and 2, with the thread-engaging or catching jaws open. Herein we have shown a second lower jaw, 14, of the thread-engaging or catching device, connected by a cross-bar 15 with the jaw-carrier and at the inner side of the shuttle-feeler, parallel to the jaw 2, and hooked at 16, Figs. 2 and 4, in order to support the thread at the inner side of the feeler.

A pivoted, depending heel 17 on the jaw-carrier is acted upon by a spring 18, said spring being stronger than the spring 13, the heel 17 normally being located farther back than the heel c' of the movable parting blade c^x .

With the described parts in the position shown in Fig. 1 the advance of the lay will cause the old filling end to pass between the rearwardly extended and open jaws of the thread-catching device, and if the thread is slack it will drop onto the jaws 2 and 14 and will be held thereon by their hooked ends.

As the lay advances it strikes the heel 17 and moves it forward, causing the jaw-carrier 1 to move from the position shown in Fig. 1 to that shown in Fig. 3, the cam slots and studs in coöperation lifting the two lower jaws and swinging downward the upper jaw 5, so that the hooked ends 3 and 6 of the adjacent jaws 2 and 5 overlap behind the filling thread, completely imprisoning the latter and insuring its elevation to the proper height to be parted.

As the jaw-carrier completes its forward movement the closed jaws positively carry the filling end between the open parting blades c , c^x , which latter are closed to part the filling end when the lay strikes the heel c' .

As the lay must make a slight forward movement after engaging the heel c' the spring 18 yields and allows the heel 17 to swing slightly, for the jaw-carrier has then reached the limit of its forward movement relatively to the shuttle-feeler.

Inasmuch as the thread-catching jaws close around and positively entrap the filling end and move it into the notch y^x between the open parting blades it will be manifest that there is no possibility of failure of such blades to part the thread of filling cleanly and with absolute certainty.

After the described operations have been effected and the lay recedes the spring 13

returns the jaw-carrier and the thread-catching jaws to normal position relatively to the shuttle-feeler, with the jaws wide open and in readiness for action when next called upon to perform their functions.

Even should the filling end be very slack the beveled ends of the lower jaws will pass beneath it and cause it to drop in front of the hooked ends, so that it cannot escape prior to closing of the jaws.

A shoulder 19 on the heel 17 limits movement of the latter due to the pull of the spring 18, said shoulder abutting against the lower edge of the jaw-carrier 1.

The construction of the thread-engaging or catching means is simple, and the operation thereof is prompt, positive and efficient, and wholly automatic.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a loom, a shuttle-feeler having a notched end, a device on the feeler to part the filling when positioned in the notch, a plate slidably mounted on the feeler and having a rearwardly extended lower jaw to pass under the filling, an upper jaw pivoted on the plate and adapted to pass over the filling, and means, acting upon forward movement of the plate relatively to the feeler, to close the outer ends of the jaws behind the filling and move it positively into the notch in position to be parted.

2. In a loom, a shuttle-feeler having a notched end, a device on the feeler to part the filling when positioned in the notch, a plate slidably mounted on the feeler and having a rearwardly extended lower jaw to pass under the filling, an upper jaw pivoted on the plate and adapted to pass over the filling, and means, acting upon forward movement of the plate relatively to the feeler, to close the outer ends of the jaws behind the filling and move it positively into the notch in position to be parted, combined with a spring to normally maintain the plate in position with the jaws open, and a moving part of the loom to effect movement of the plate in opposition to the spring.

3. In a loom, a shuttle-feeler, a device thereon to part the filling when properly positioned, a jaw-carrier longitudinally movable on the feeler and having relatively movable jaws normally extended beyond the parting device and adapted to receive the filling between them, means to move the jaw-carrier forward on the feeler as the lay beats up, and a device to close said jaws and entrap the filling and move the latter positively into position to be acted upon by the parting device.

4. In a loom, a shuttle-feeler, a device thereon to part the filling when properly positioned, a jaw-carrier longitudinally movable on the feeler and having relatively mov-

able hooked jaws normally extended beyond the parting device, to receive the filling between them, and means operative by forward movement of the jaw-carrier as the lay beats up to close the hooked ends of the jaws behind the filling and carry the latter forward positively into position to be parted.

5 5. In a loom, in combination, an instrumentality movable bodily into position to act upon and part the filling end near the shuttle, and means to position the filling end to be acted upon by said instrumentality, said means including relatively movable jaws to close automatically behind and entrap the filling end and move it positively into position to be parted.

10 6. In a loom, in combination, a shuttle-feeler, relatively movable blades thereon to part the filling end, and means slidably mounted on the feeler and including normally open and relatively movable jaws, to engage automatically and entrap the filling end and positively move it into position be-

tween and to be acted upon by the parting blades.

25 7. In a loom, in combination, a shuttle-feeler, relatively movable blades thereon to part the filling-end, two connected hooked jaws slidably mounted upon and at opposite sides of the feeler, to pass under and engage the filling end, a relatively movable hooked jaw to close upon one of the lower jaws behind the filling end and entrap the same, and means to effect closure of said jaws and to move them bodily relatively to the feeler to bring the entrapped filling end between and in position to be acted upon by the parting blades.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

WILLAM H. SPENCER.
ALFRED HURST.

Witnesses:

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JOHN A. GAINES.