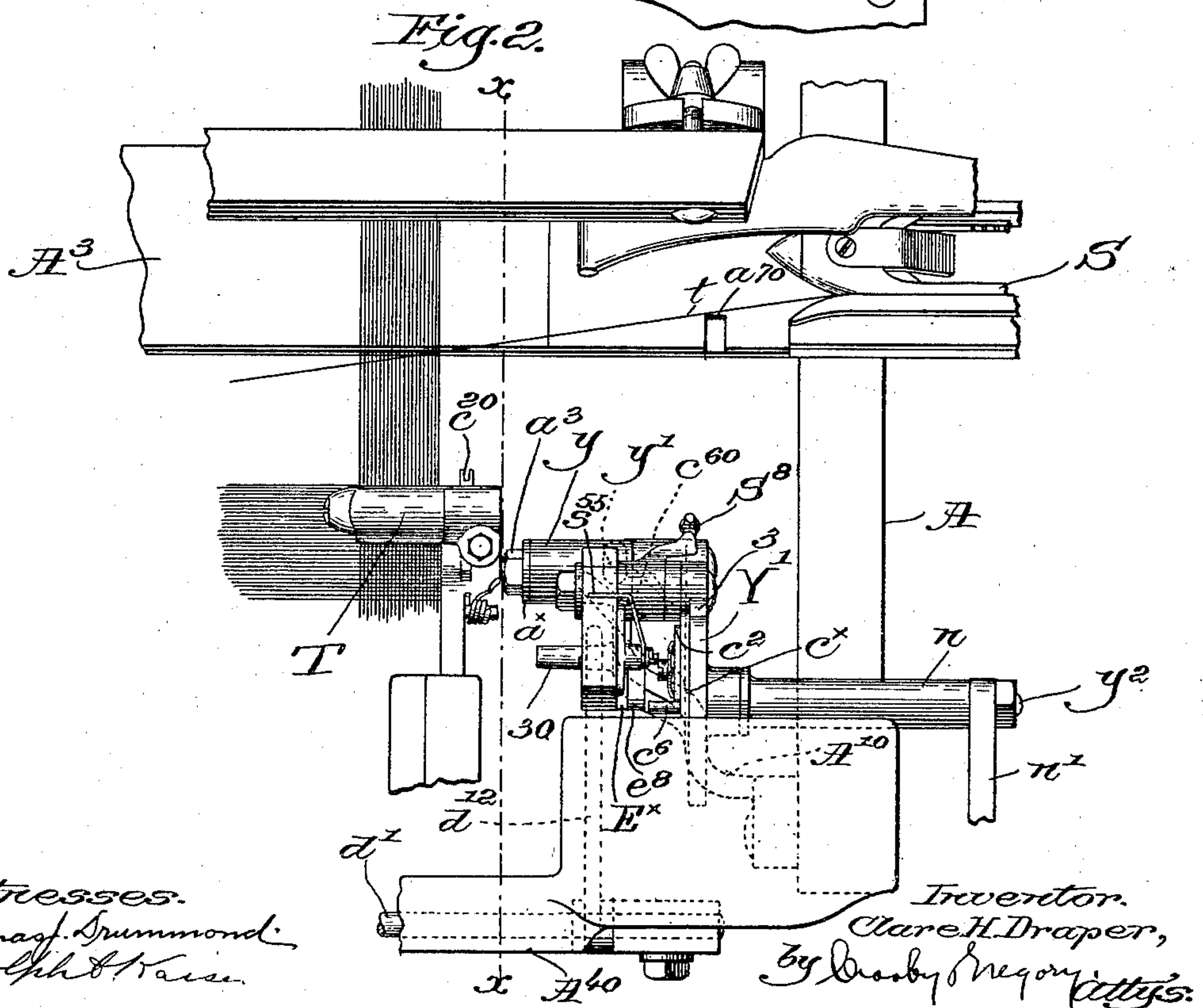
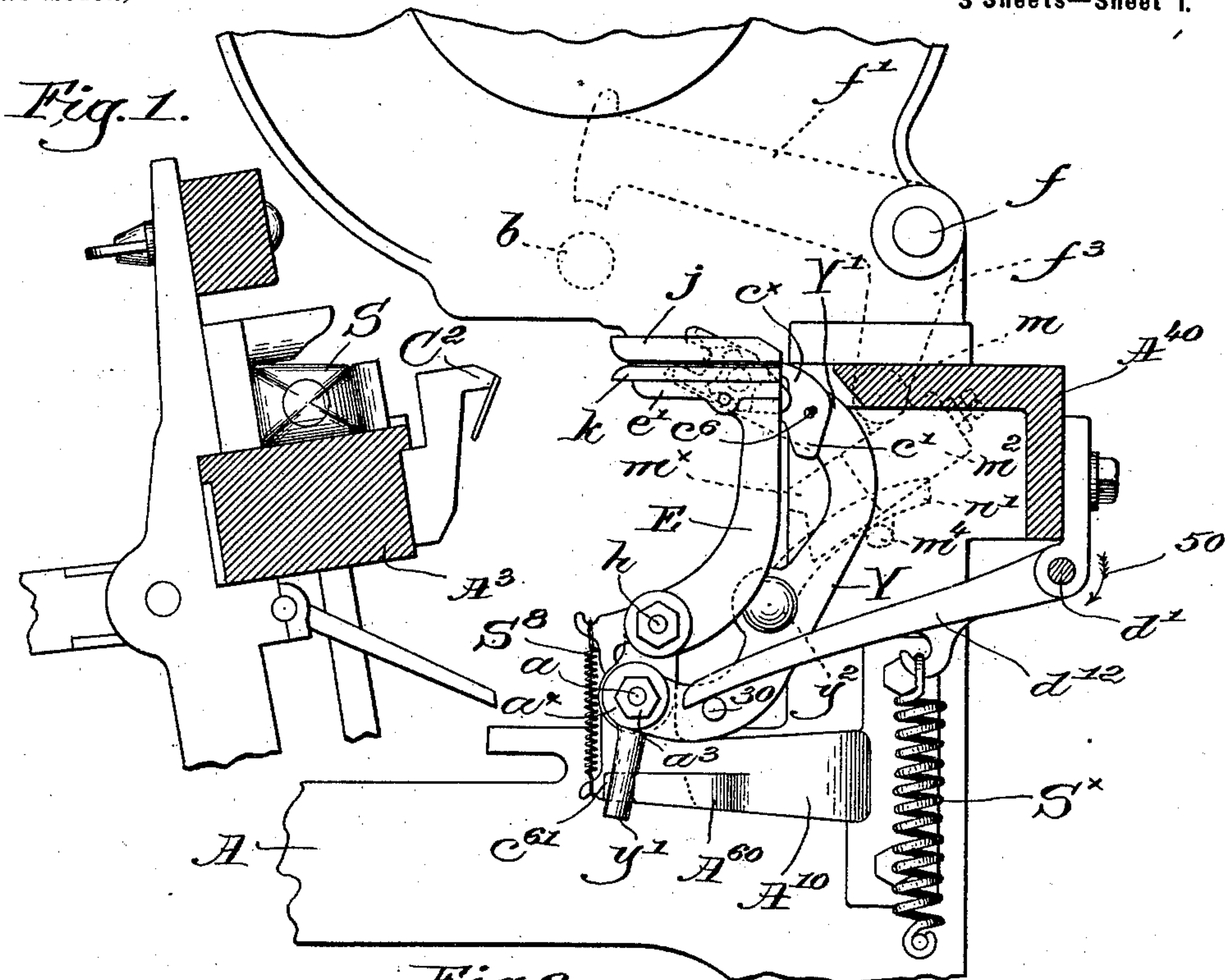


C. H. DRAPER.
THREAD PARTING MECHANISM FOR LOOMS.

(Application filed July 20, 1901.)

(No Model.)

3 Sheets—Sheet 1.



No. 683,423.

Patented Sept. 24, 1901.

C. H. DRAPER.

THREAD PARTING MECHANISM FOR LOOMS.

(Application filed July 20, 1901.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 3.

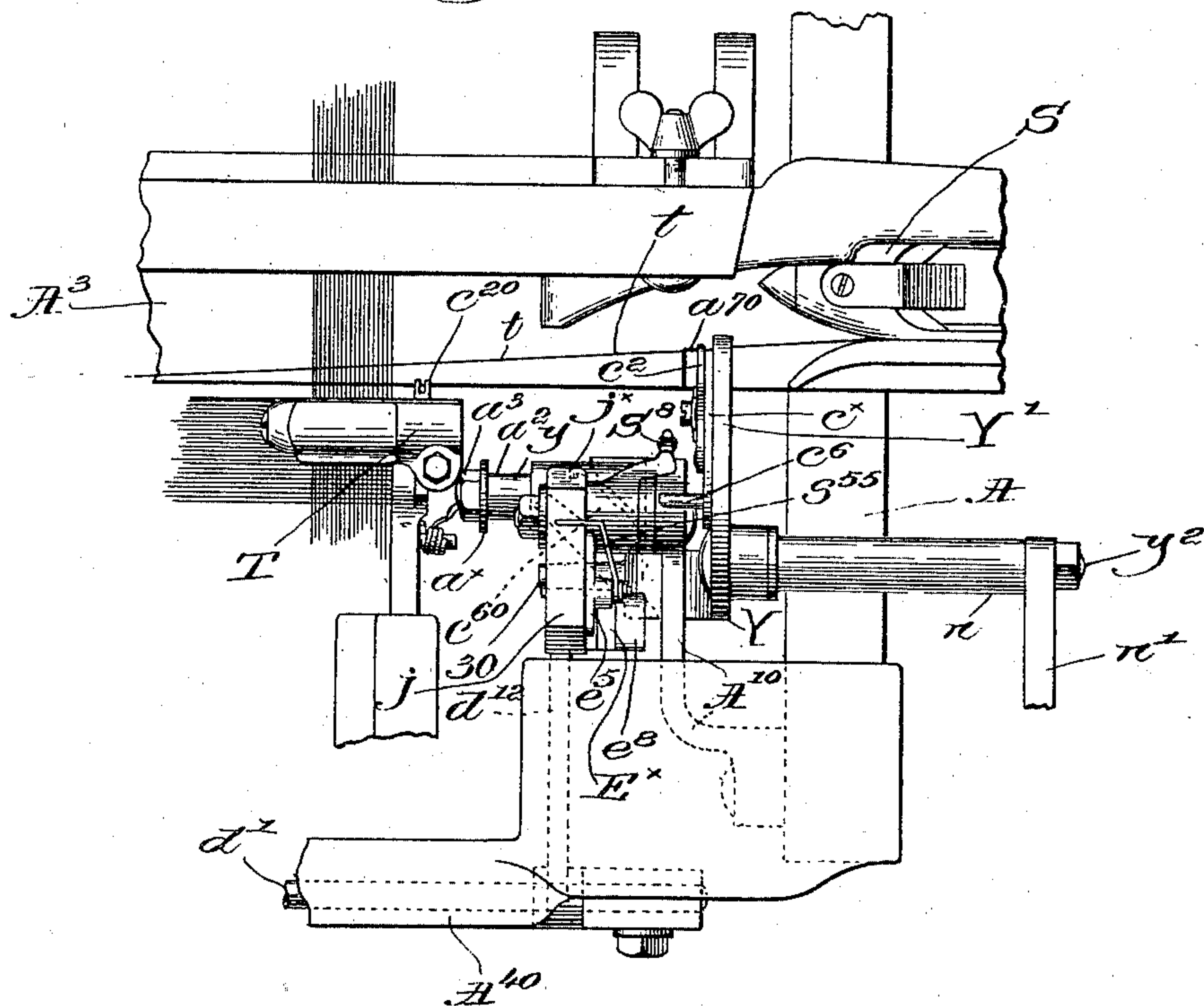


Fig. 9.

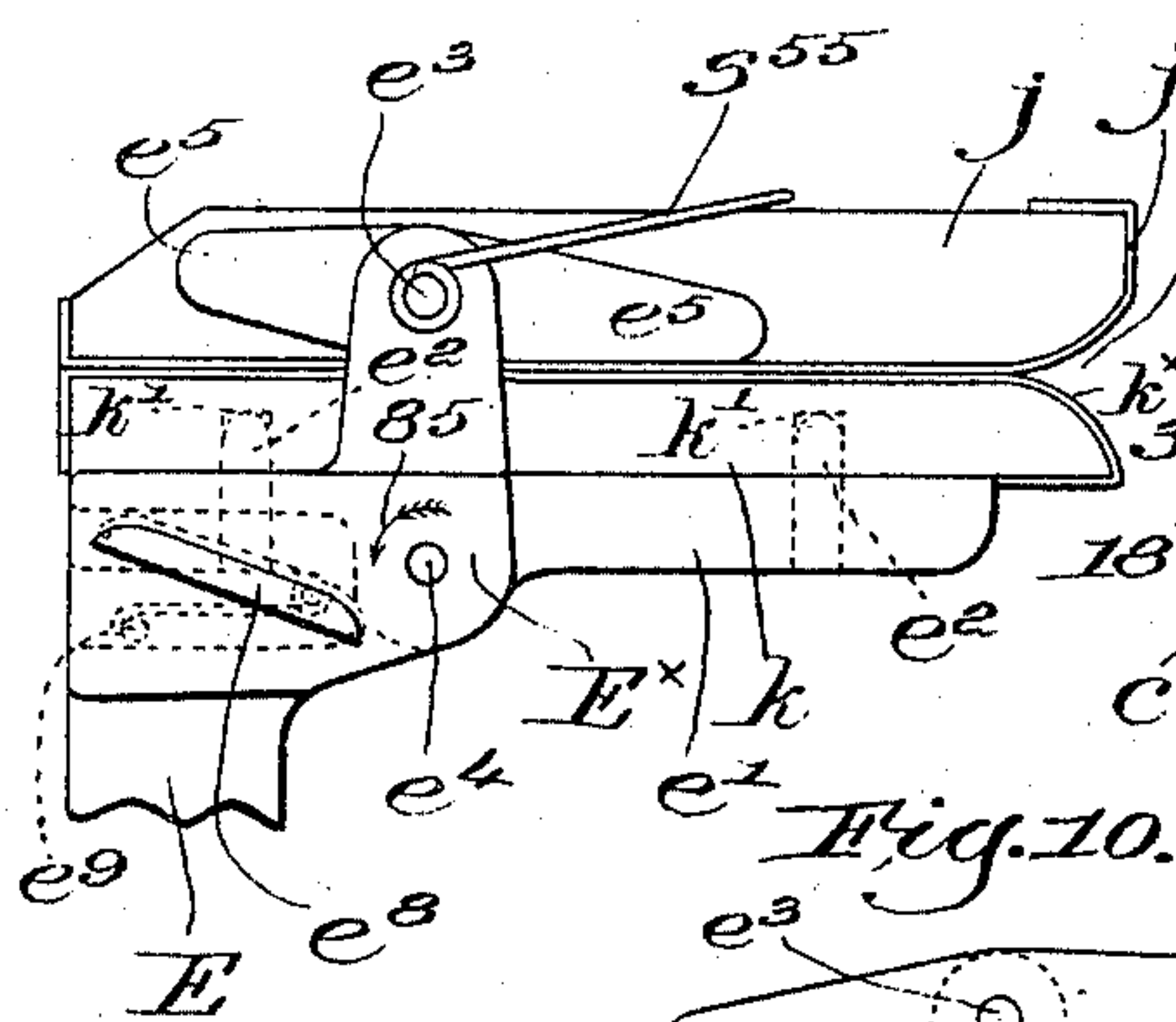


Fig. 7.

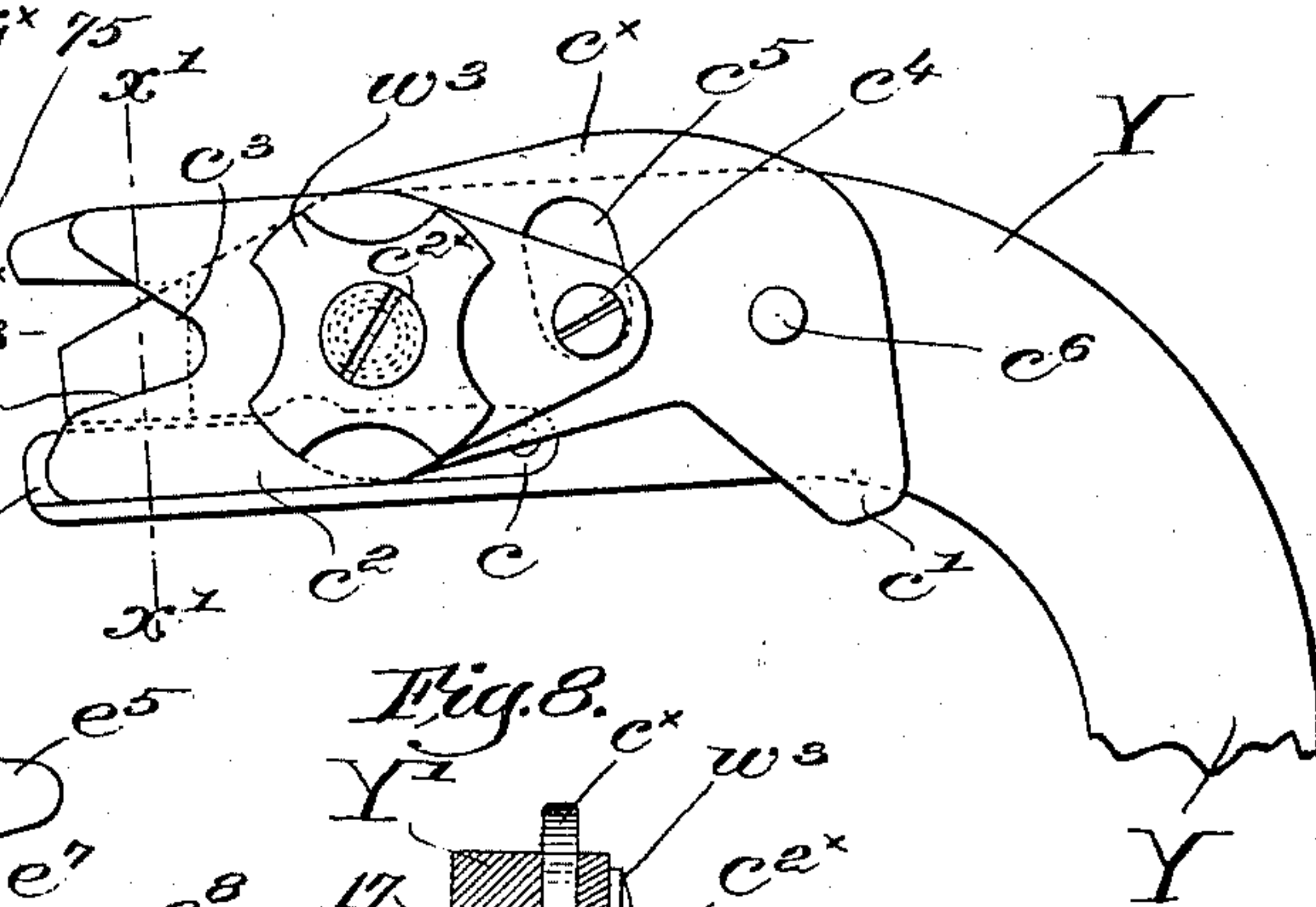


Fig. 10.

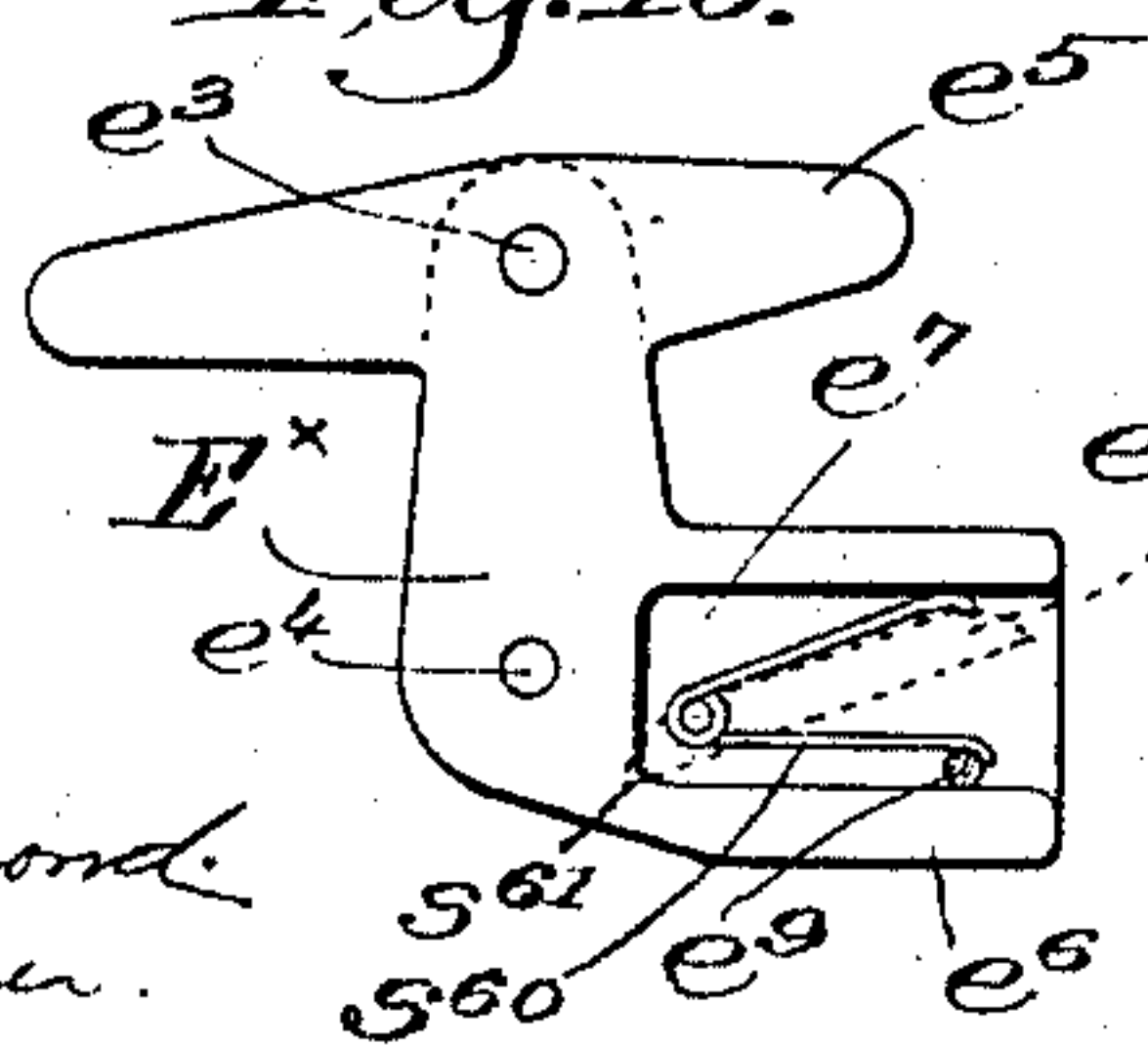
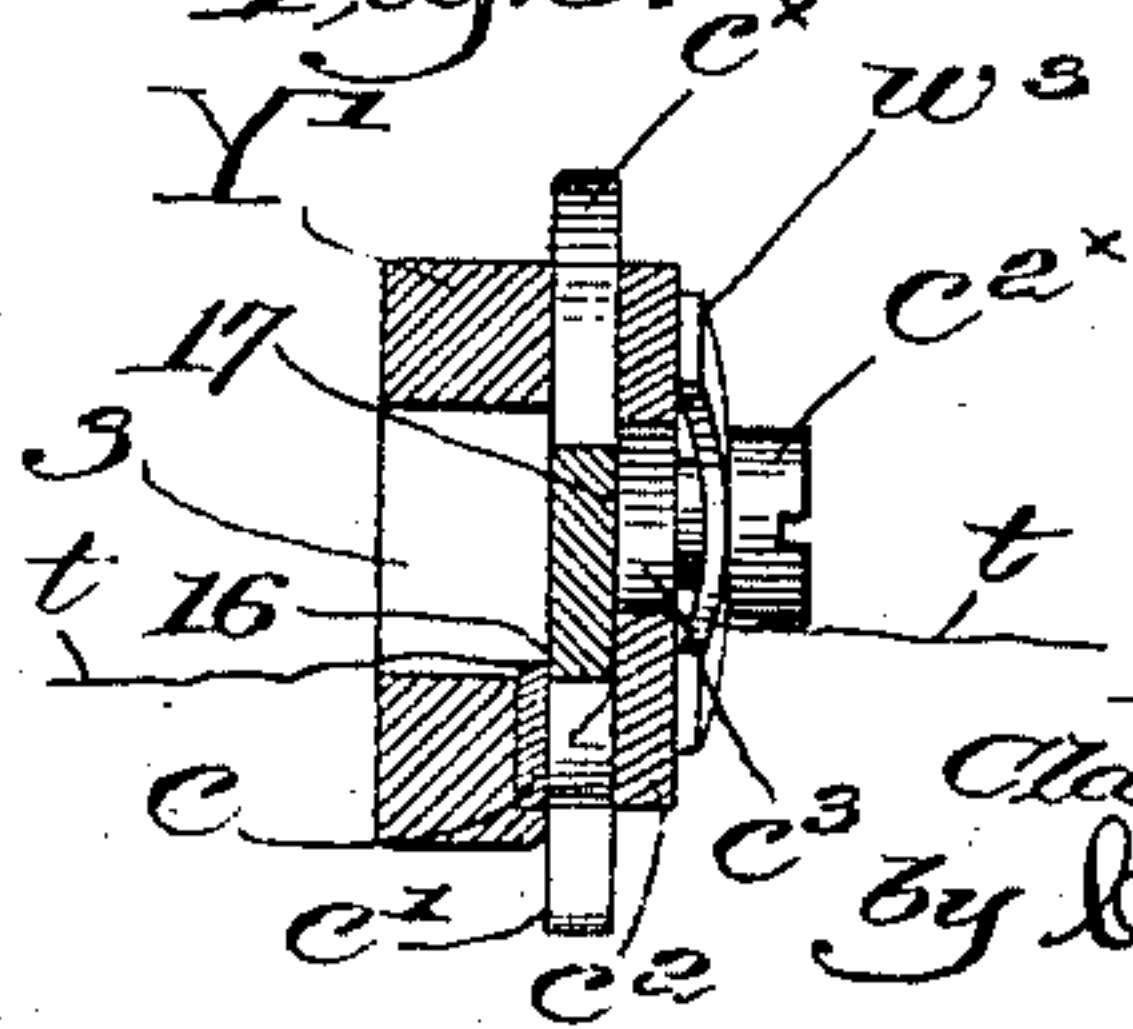


Fig. 8.



Witnesses:

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No. 683,423.

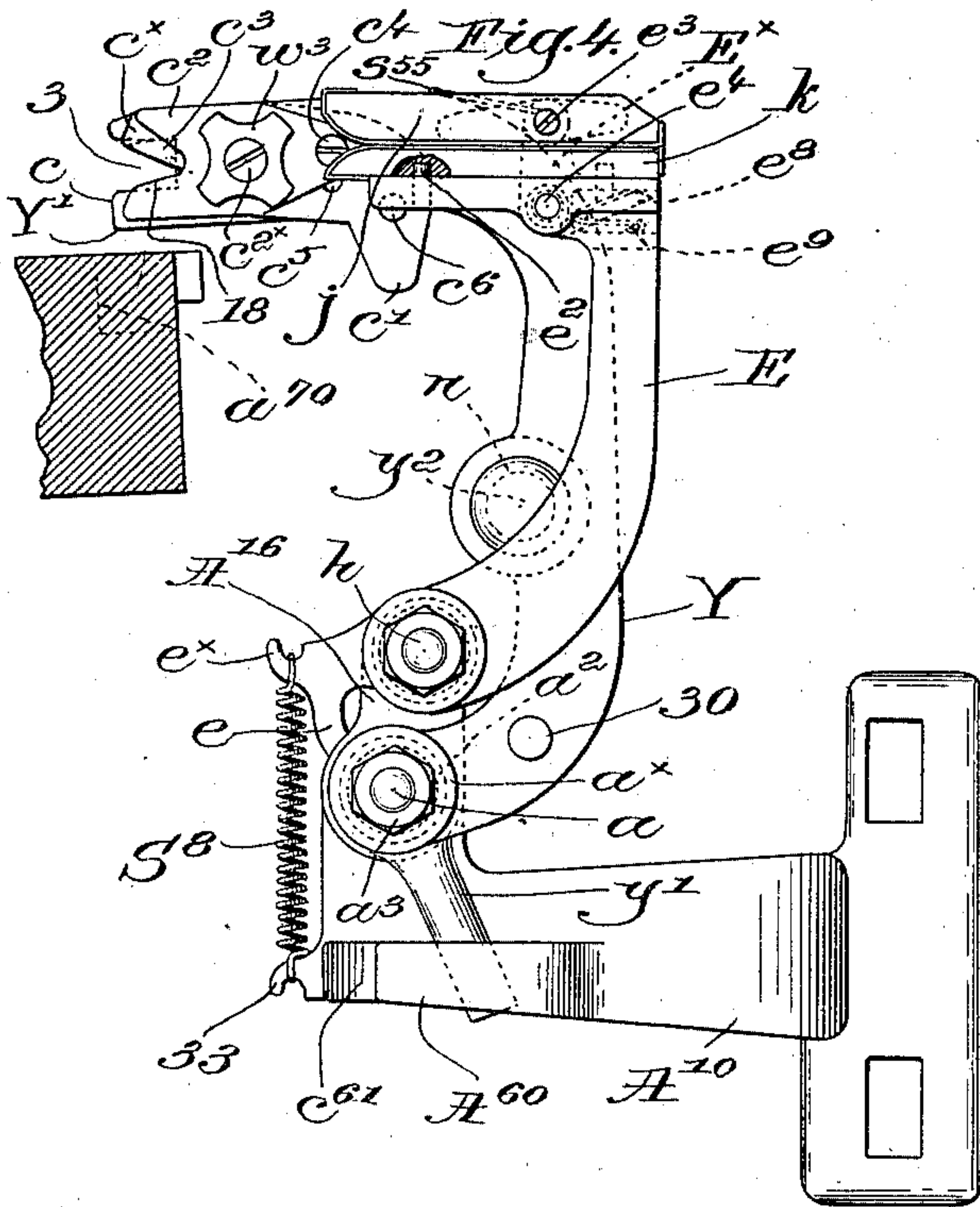
Patented Sept. 24, 1901.

C. H. DRAPER.
THREAD PARTING MECHANISM FOR LOOMS.

(Application filed July 20, 1901.)

(No Model.)

3 Sheets—Sheet 3.



UNITED STATES PATENT OFFICE.

CLARE H. DRAPER, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO
DRAPER COMPANY, OF SAME PLACE.

THREAD-PARTING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 683,423, dated September 24, 1901.

Application filed July 20, 1901. Serial No. 68,999. (No model.)

To all whom it may concern:

Be it known that I, CLARE H. DRAPER, a citizen of the United States, and a resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Thread-Parting Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In so-called "feeler-looms" provided with mechanism for automatically providing fresh filling, whether by introduction of a fresh supply of filling to a running shuttle or by substituting a filled shuttle for the one in play, the end of the old filling extends from the cloth to the shuttle containing the filling-supply to be abandoned at the time filling change is to be effected. It is highly desirable to part or sever this filling close to the shuttle and thereafter to part this filling end adjacent the edge of the cloth by another parting device—such, for instance, as a thread-cutting temple—and in United States Patent No. 641,792, dated January 23, 1900, mechanism is shown for clamping the thread and severing it adjacent the shuttle while clamped. The thread end while so held is thereafter moved into the range of the thread-cutting temple to be severed thereby adjacent the edge of the cloth, and the piece of filling thus parted in two places is subsequently released by the clamp or holding device and dropped out of the shuttle-path, so as to prevent accidental weaving in of such piece of thread into the cloth. In actual practice such mechanism is so constructed that when the clamping device returns to normal position the filling end can draw through the said device to prevent breakage of the filling end as it is thus pulled over into the field of action of the thread-cutting temple; but it sometimes happens that the filling end will not draw through the clamp, and it breaks before the temple can cut it, and the end of filling is left hanging from the selvage or snaps into the cloth, making a defect.

In my present invention I have devised not only a novel form of thread-parter and thread-clamp, as will appear hereinafter, wherein the filling-thread is positively held

by the clamping device, but I have also provided means for moving the parting and clamping means in a diagonal or curved path between inoperative and operative positions, the former position being nearer the edge of the cloth than the latter position. I have also improved the shuttle feeler or detector to which in the present embodiment of my invention the thread-parter is attached, such improvement in the feeler preventing severance of the filling-thread by being caught between the point of the shuttle and the shuttle-feeler.

The thread is clamped near the shuttle and then on the return of the clamping device the filling end, positively clamped, is moved toward the cloth to relieve the filling from longitudinal strain before the thread-cutting temple can cut it. In order to hold the end of filling after it has been parted near the shuttle and brought back into position to be acted upon by the temple, I have herein shown a thread-catcher which engages the filling end while it is still held by the clamp and which retains it after it has been released by the latter. After the temple-cutter has parted the thread the catcher retains the severed piece, and finally, by means to be described, discharges it out of the way of the other parts of the loom.

Broadly a thread-catcher is not new, as in United States Patents Nos. 677,096, 677,097, and 677,098, all dated June 25, 1901, a thread-catcher is shown operating in conjunction with a thread-parter and thread-clamp, and the broad combination of such elements is not of my invention and is not claimed herein.

I desire it to be understood that while the employment of a thread-catcher is desirable in connection with the other parts of my invention it is not absolutely necessary, as the parted piece of filling will be held by the thread-clamp until the temple thread-cutter has acted, the subsequent opening of the clamp releasing such piece of filling.

I have herein shown my invention as applied to a loom provided with mechanism for automatically providing the running shuttle with a fresh supply of filling at the proper time; but my invention is not confined to employment with such form of filling-replen-

ishing mechanism, as it is equally applicable to a loom provided with shuttle-changing mechanism.

Figure 1 is a transverse sectional view of a portion of a loom provided with automatic filling-replenishing mechanism on the line xx , Fig. 2, showing a portion of the inner end of the stand for the filling-feeder, one embodiment of my invention being shown in connection therewith and in normal inoperative position. Fig. 2 is a top or plan view of a portion of the mechanism shown in Fig. 1, the filling-replenishing mechanism being omitted for the sake of clearness in illustration. Fig. 3 is a similar view, but showing the thread-parter and thread-clamp in operative position ready to act upon the filling-thread when the lay completes its forward beat. Fig. 4 is an enlarged view, in side elevation, showing the parter and clamp in operative position ready to act upon the thread. Fig. 5 is a front elevation of such mechanism partly broken out and in the position shown in Fig. 4. Fig. 6 is an enlarged plan view of the means for effecting the diagonal movement of the parter and clamp from inoperative to operative position, and vice versa. Fig. 7 is an inner side view, enlarged, of the thread-parter and thread-clamp after the thread has been clamped and parted. Fig. 8 is a transverse section thereof on the line $x'x'$, Fig. 7, looking toward the right and showing clearly the mode of clamping the thread. Fig. 9 is an enlarged side elevation of the thread-catcher and the means for opening the clamp and thread-parter, viewing the side of the thread-catcher nearer the clamp and parter; and Fig. 10 is an opposite side view of the means for opening the clamp and for effecting relative longitudinal movement of the jaws of the thread-catcher.

I have herein shown the parter and clamp so constructed and arranged that they will be in position to act upon the filling when the shuttle is properly boxed, the shuttle-feeler forming a support for the parter and clamp, and the thread-catcher is stationary as a whole.

The loom-frame A, lay A^3 , having the bottom of one of its shuttle-boxes cut away below the self-threading shuttle S, the filling-replenishing mechanism, comprising a feeder to hold the filling supplies or carriers b , (see dotted lines, Fig. 1,) the transferrer f' , fulcrumed at f on the breast-beam A^{40} and having a depending end f^3 , and the shaft d' , adapted to be rocked in the direction of arrow 50, Fig. 1, when said replenishing mechanism is to be operated may be and are all as in United States Patent No. 641,792. So, too, the spring-controlled rocker-stud m on the end f^3 and having an arm m^2 and a lateral lug m^4 , the notched dog m^x on said arm to be engaged by the bunter C^2 on the lay to effect change of filling are as in said patent.

A bracket A^{10} on the loom side has extended through and projecting beyond an up-

right ear A^{16} a long horizontal stud a , headed at a' at its outer end, a sleeve a^2 surrounding the stud between the inner face of the ear and an enlarged washer a^x and held clamped in place by a nut a^3 on the inner end of said stud, thus rigidly holding both stud and sleeve upon the ear, the sleeve constituting a long bearing of considerable diameter. (See Figs. 4 and 5.) On this sleeve is rotatably mounted the hub y of an upturned arm or swinging support Y, bent rearwardly at its upper end at Y' to constitute a shuttle-feeler to move in well-known manner across the raceway of the lay at the entrance of the adjacent shuttle-box, if the shuttle is properly boxed, the front elevation, Fig. 5, showing that the arm Y is bent laterally a short distance above the hub to bring the shuttle-feeler portion into the proper path of movement. The hub y is shorter than the distance between the washer a^x and the annular head a^4 on the end of the sleeve adjacent the bracket, so that the hub can move longitudinally upon the sleeve, and thereby effect a lateral bodily movement of the arm Y, the hub having a depending follower or stud y' , which enters a cam-slot c^{60} in a shelf A^{60} , extended inward from the bracket A^{10} . (See Figs. 4, 5, and 6.) The slot is diagonal from the loom side toward the center of the loom and closed at its end nearer the loom side, the edges c^{61} c^{62} of the slot being beveled, as best shown in Fig. 6, from top to bottom. In its normal position, Fig. 1, the arm Y is inclined toward the breast-beam and the follower y' is near the entrance of the cam-slot, so that the hub y and arm Y will then be nearest the edge of the cloth, as shown in Fig. 2. When the arm Y is swung back, however, into operative position, Fig. 4, the rotation of the hub y swings follower y' into the cam-slot toward its closed end, and thereby the hub y is moved bodily, with its arm Y, toward the right into the position shown in Figs. 3 and 5, the resultant of the two movements of the said arm Y being a diagonal path from the edge of the cloth toward the shuttle, and vice versa, upon return of said arm from operative to inoperative or normal position.

A stub y^2 , extended laterally from the outer side of the arm or support Y, has secured to it the hub n of a finger n' , which is extended upward and forward to rest upon the lug m^4 , referred to, and the controlling rock-shaft d' has fast upon it an arm d^{12} , connected to one end of a strong spring S^x , Fig. 1, which at its lower end is secured to the loom-frame, said spring holding the arm in the position shown in Fig. 1 upon a pin 30 on and eccentric to the fulcrum of the support Y, the said support, the shuttle-feeler Y' , and the various parts carried thereby being thus maintained by the spring in normal position, (illustrated in Figs. 1 and 2,) and through the finger n' the dog m^x is maintained normally inoperative.

At its upper extremity the feeler Y' is

notched, as at 3, (see Figs. 7 and 8,) to receive the filling-thread t (shown in Fig. 3) when the feeler is moved into operative position adjacent the inner end of the shuttle-box nearest the replenishing mechanism, and a fixed cutting-blade c is secured to the feeler in a suitable socket made therein at the lower edge of the notch 3, as clearly shown in Figs. 7 and 8, and a headed screw-stud c^{2x} is threaded into a suitable hole in the feeler above the fixed blade and between the notch 3 and the bend of the arm Y. I prefer to make the notch 3 as rectangular, and herein I have shown it as square, so that the round point of the shuttle if improperly boxed will have a minimum contact with the edge of the notch, thus increasing the clearance very greatly, so that the running filling-thread will not be apt to be caught and severed between the shuttle and the feeler.

On the stud c^{2x} as a fulcrum I have mounted the movable member common to the thread-parter and thread-clamp and which fulfils the twofold function of a cutting-blade and a clamping-jaw, the said member c^x having its lower edge, as 16, Fig. 8, arranged to cooperate with the fixed blade c to part the filling-thread at the proper time, the blade-jaw or common member c^x resting against the flat inner face of the feeler and having at its front end a depending heel c' . The flat face 17 of the said blade-jaw is arranged to cooperate with the fixed or stationary member c^2 of the thread-clamp, said member c^2 having a notched end c^3 , Figs. 7 and 8, so that it will be alongside of the notched portion 3 of the feeler; but the lower edge 18, Fig. 8, of the notched end c^3 is somewhat above the upper edge of the cutting-blade c . A spring-washer w^3 , interposed between the head of the screw-stud c^{2x} and the adjacent face of the stationary member or jaw c^2 of the thread-clamp, holds the said jaw yieldingly pressed against the blade-jaw c^x and presses the latter against the vertical inner face of the feeler, the amount of pressure being determined by regulation of the screw-stud c^{2x} .

I have provided herein, as will now be manifest, a thread-parter and a thread-clamp, which are mounted upon the swinging support or arm Y, broadly speaking, and, specifically, they are mounted upon the shuttle-feeler and moved therewith bodily into position at certain times to act upon the filling-thread t between the shuttle and the edge of the cloth, and the thread-parter comprises, essentially, a fixed cutting-blade c and a cooperating movable blade—the member c^x —while the thread-clamp comprises a stationary jaw c^2 and a cooperating movable jaw—viz., the member c^x —so that said member, which is interposed between the stationary blade and the stationary jaw and which is movable therebetween, is common to both the thread-cutter and the thread-clamp and is, in fact, a blade-jaw. Now when the parter and clamp are in position to act upon the filling-

thread, as will be the case when the lay has completed its forward movement, referring to Fig. 3, then the filling-thread t will enter the notch 3 of the feeler and the notch c^3 in the rear end of the stationary blade of the clamp, it being supposed that the blade-jaw c^x is open. Thereupon when said blade-jaw is closed its lower edge 16 will first act upon the thread to press it down over the lower edge 18 of the notch c^3 and to clamp it tightly between the adjacent flat faces of the clamp members c^x c^2 , and as the member c^x continues to descend after having thus clamped the thread it will part the latter when the lower cutting edge of the said member cooperates with the fixed cutting-blade, and in Fig. 8 I have shown the thread as clamped and also as having been severed to more clearly illustrate the operation of this part of the apparatus.

The stud c^{2x} passes through the clamping-jaw c^2 , and the latter is prevented from rotative movement upon the stud by a pin c^4 , extended through the said jaw eccentric to its fulcrum and rigidly fixed in the feeler-arm, said pin passing through a slot c^5 in the blade-jaw c^x , so that the latter may move upon the stud c^{2x} as a fulcrum without interference. A setting-pin c^6 is shown as laterally extended from the blade-jaw c^x , the operation of such pin being described hereinafter. The pin c^4 , cooperating with the slot c^5 , limits undue movement of the member c^x common to the parter and clamp, and from the foregoing it will be seen that the operations of clamping and parting the filling-thread are performed successively by or through this common member having the two functions of parting-blade and clamping-jaw, and, furthermore, the action of the clamp upon the thread is positive—that is to say, the thread is positively held beyond the possibility of drawing through or between the two clamp members in a longitudinal direction, and as it is so held the diagonal path of movement of the parter and clamp hereinbefore referred to prevents the stretching or breaking of the thread as the clamp returns to normal position. When the clamp and parter are bodily moved into operative position, (see Figs. 4 and 5,) the blade-jaw c^x is open and the heel c' is in the path of a portion of the lay to be struck as the lay completes its forward beat to thereby rock the blade-jaw on its fulcrum from the position shown in Fig. 4 into the position shown in Fig. 7, successively clamping and parting the thread t adjacent the shuttle, and in Fig. 3 I have shown the lay as cut away to leave a shoulder a^{70} in the path of the heel to act upon the latter to close the blade-jaw at the proper time. While the thread is clamped and after the change of filling has been effected, the feeler returns to normal position, (shown in Figs. 1 and 2,) and as it does so the clamp moves the thread toward the breast-beam, and also, it will be remembered, the clamp moves bodily toward the cloth to pre-

vent straining or breaking of the thread, and the latter is brought into the field of action of a thread-cutting temple T, Figs. 2 and 3, which may be substantially such as shown and described in United States Patent No. 585,465, dated June 29, 1895, the movable cutting member c^{20} cooperating with a fixed member or blade (not shown) and operating, as in the patent referred to, when the filling end is brought against the fixed blade of the thread-cutters as described, and thereafter on a forward beat of the lay the movable member c^{20} is operated to cooperate with the fixed member or blade and part the filling adjacent the selvage of the cloth.

It will be manifest that as the filling-thread has been parted in two places—viz., adjacent the shuttle and adjacent the selvage—a piece of filling has been bodily removed from the filling, forming part of the supply to be abandoned or to be ejected from the shuttle, and in order to prevent this piece of thread from being caught in the cloth or woven therein I have provided a thread-catcher, which engages and holds the piece of thread and gradually works it out into position to be discharged at a point where no damage can result.

The upturned ear A^{16} on the bracket A^{10} , Figs. 4, 5, and 6, near its base supports the stud a , and near its tip said ear supports a second headed stud h , extended inward above the stud a and supporting in its turn a sleeve h' , having an enlarged annular head h^2 adjacent the face of the ear, the sleeve being held in place on the stud by a washer h^x and a nut h^3 , the washer h^x being of greater diameter than the sleeve. The latter provides a large and strong bearing for the hub h^4 of an upright and bent arm E, provided, as shown in Fig. 4, with an eccentric-hook e^x and a downturned stop e , which latter is normally held against the upright edge of the ear A^{16} by a spring S^8 , one end of which is attached to the hook e^x and its other end to a hook 33 at the base of the ear, the spring being strong enough to normally maintain the arm E in the position shown best in Fig. 4. The arm E supports the thread-catcher, which comprises, essentially, two elongated jaws j k , which may be made of wood, covered on their opposed faces with some suitable rough surface, as at j^x k^x , Fig. 9, and their rear ends are flared toward the lay, as at 75, to receive the thread, as will be described. Any suitable fabric may be used, and I prefer to use dog-fish skin and to so arrange the jaw-coverings that the teeth or points on the opposed faces of the covering will be inclined toward the front of the loom and oppositely to each other. The lower jaw k rests on a rearward extension e' at the top of the arm E and is provided with holes k' , Fig. 9, in its under face to receive upright pins e^3 , fixed in the extension e' , the upper jaw normally resting upon the lower jaw and having extended loosely through it a horizontal pin e^3 , secured to or forming part of a casting E^x (shown separately in

Fig. 10) and fulcrumed at e^4 at one side of the extension e' . This casting E^x has a substantially T-shaped head e^5 , against which the side of the jaw j rests to assist in maintaining the jaw in position, and the extended foot e^6 of the said casting is provided on its inner face adjacent the top of the arm E with a socket e^7 , and on its outer face the said foot is provided with a cam ledge or rib e^8 . Referring to Fig. 9, a light spring s^{55} , secured at one end to the casting E^x , rests at its free end upon the top of the jaw j to maintain it pressed against its fellow. The arm E is provided with a lateral pin e^9 , which projects into the recess e^7 , near the lower portion thereof, to support one end of a spring s^{60} , which is coiled between its ends, as at s^{61} , (see Fig. 10,) its other free end bearing against the top of the recess e^7 and normally acting to maintain the casting E^x in the position shown clearly in Fig. 9, with the pin e^3 keeping the upper jaw j toward the back of the loom. The arm E is so located with relation to the swinging support or arm Y that when the latter has returned part way to normal position the setting-pin c^6 on the blade-jaw c^x will ride over the top of such cam, depressing the latter, and thereby causing the casting E^x to rock on its fulcrum in the direction of the arrow 85, Fig. 9, and in so doing temporarily compressing the spring s^{60} , and as the upturned portion of the casting is thus swung toward the front of the loom the jaw j will be moved in the same direction and will cause its covered face to rub longitudinally over the opposed covered face of the lower fixed jaw k , so that a piece of thread previously engaged by said jaws will be moved toward the front ends of the latter, the opposite pointing of the nap on the two jaw-coverings acting like teeth to work the thread forward, but preventing its return when the upper jaw is moved rearwardly by the elasticity of the spring s^{60} as soon as the pin c^6 has passed beyond the outer end of the cam e^8 . It will be manifest that the blade-jaw c^x is relatively to the fixed blade and jaw of the parter and clamp, respectively, still in the position shown in Fig. 7, and the expansion of the spring s^{60} when it returns the casting E^x to the position shown in Fig. 9 elevates the outer end of the cam e^8 , so that when the feeler is next moved toward the lay the setting-pin c^6 will pass along the under face of the cam, and as the latter cannot at such time move on its fulcrum opposite to the arrow 85, Fig. 9, it necessarily follows that the pin c^6 will be depressed, to thereby rock the blade-jaw c^x on its fulcrum, depressing the heel c' and elevating its rear end. In other words, the cam e^8 then acts to open the parter and clamp, so that as they reach their operative position the thread can enter the notches of the feeler and the fixed clamping-blade. The return of the feeler to normal position after the parter has parted the filling-thread near the shuttle operates through the

clamp to draw the thread not only into the field of action of the thread-cutting temple, but also to insert it between the jaws of the thread-catcher, so that when subsequently the cutter parts the thread adjacent the cloth selvage the piece cut out will be left hanging from the thread-catcher and will be gradually worked to the front end thereof by intermittent longitudinal rubbing action of the jaws of the thread-catcher one upon the other, as has been described. Should the setting-pin c^6 , when cooperating with the upper face of the cam e^3 , fail for any reason to cooperate therewith just as it should, any breakage of the parts will be prevented by yielding of the safety-spring S^8 , as at such time the arm E would swing on its fulcrum toward the front of the loom until the pin and cam were disengaged. The setting-pin and the cam-shelf are made long and wide enough, respectively, to operate one with the other at the proper time notwithstanding the lateral bodily movement of the feeler in its movement from inoperative to operative position, and vice versa. The rocking of the controlling-shaft d' in the direction of the arrow 50, Fig. 1, raises the arm d^{12} , and through the different devices partly shown in Fig. 1 the dog m^x is moved into the path of the bunter C^2 and the shuttle-feeler is moved into operative position, and if the shuttle be properly boxed then the thread-parter and thread-clamp will be positioned to act upon the thread, as has been described, the completion of the forward beat of the lay acting to clamp and then to part the thread adjacent the shuttle, and subsequently the clamped thread is moved between the jaws of the thread-catcher into the field of action of the secondary thread-cutter to be parted by the latter. Of course if the shuttle is improperly boxed the feeler will not move far enough across the raceway of the lay to bring the thread parter and clamp into operative position, and inasmuch as the filling-replenishing mechanism will not operate at such time the hereinbefore-described operation of the thread clamp and parter will not be effected.

My invention is not restricted to the precise construction and arrangement herein shown, as the same may be modified or rearranged in various details without departing from the spirit and scope of my invention.

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

1. In an automatic filling - replenishing loom, a thread-parter and a thread-clamp, to act upon the thread of the filling-supply to be abandoned, said parter and clamp having one member in common, and means operating through such member to successively clamp and part the thread upon replenishment of filling.

2. In an automatic filling - replenishing loom, a thread-parter and a thread-clamp bodily movable upon replenishment of filling

into position to act upon the thread of the filling-supply to be abandoned, the parter and clamp including a common movable member, and means acting therethrough to successively clamp and part the thread.

3. In an automatic filling - replenishing loom, a thread-parter and a thread-clamp, arranged in juxtaposition and adapted to act upon the thread of the filling-supply to be abandoned, a combined parting-blade and clamp member, forming one element of the parter and clamp, and means to effect the actuation of said element upon replenishment of filling, to first positively clamp and thereafter to part the thread.

4. In an automatic filling - replenishing loom, a thread-parter and a thread-clamp, arranged in juxtaposition and adapted to act upon the thread of the filling-supply to be abandoned, the parter including a fixed blade and the clamp a fixed member, a movable combined parting-blade and clamp member, located between and adapted to cooperate with the said fixed elements of the parter and clamp respectively, and means to move the combined blade and clamp member to successively clamp and part the thread.

5. In an automatic filling - replenishing loom, a thread-parter, and a thread-clamp, bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, the parter including a fixed blade and the clamp including a fixed jaw, arranged in parallelism and adjacent each other, a movable and combined blade and jaw, to cooperate with the said fixed members of the parter and clamp, and means to operate said blade-jaw to successively clamp and part the thread.

6. In an automatic filling - replenishing loom, a thread-parter, and a thread-clamp, bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, the parter including a fixed blade and the clamp including a laterally-yielding, fixed jaw, arranged adjacent each other and in parallelism, a blade-jaw movably mounted between them and cooperating with each of said fixed members, to clamp and part the thread, and means to effect the actuation of the blade-jaw upon replenishment of filling.

7. In an automatic filling - replenishing loom, a thread-parter, and a thread-clamp, bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, the parter including a fixed blade and the clamp including a fixed jaw, arranged in parallelism and adjacent each other, a movable and combined blade and jaw, to cooperate with the said fixed members of the parter and clamp, a device to open the said blade-jaw as the parter and clamp are moved into position to act upon the thread, and means to close said blade-jaw upon replenishment of filling to clamp and thereafter part the thread.

8. In an automatic filling - replenishing loom, a thread-parter and a thread-clamp bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, the parter including a fixed blade and the clamp including a laterally-yielding, fixed jaw, arranged adjacent each other and in parallelism, the acting edge of the blade being located below the clamping portion of the jaw, a blade movable between said members and having a cutting edge to cooperate with the fixed blade, and a flat face to cooperate with the jaw, and means to depress the movable blade to first clamp the thread between its flat face and the fixed jaw and thereafter to part the thread by cooperation of the cutting edge of said blade with the fixed blade.

9. In a loom provided with filling-replenishing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a thread-parter and a thread-clamp, bodily movable by or through the operation of the controlling means into position to act upon the thread of the filling-carrier to be ejected, a movable member common to said parter and clamp, means to actuate said member to clamp and thereafter to part the thread upon change of filling, and a device to return said member to normal position relative to the parter and clamp.

10. In a loom provided with filling-replenishing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a thread-parter and a thread-clamp, bodily movable by or through the operation of the controlling means into position to act upon the thread of the filling-carrier to be ejected, a movable member common to said parter and clamp, means to actuate said member to clamp and thereafter to part the thread upon change of filling, and a relatively fixed device to move said member to open the parter and clamp as they are moved into position to act upon the thread.

11. In a loom provided with filling-replenishing mechanism, a shuttle adapted to carry a supply of filling, a thread-parter and a thread-clamp, each including a fixed member, arranged in parallelism, a common movable member between them, means operative upon a change of filling to operate said movable member and clamp the thread of the filling-carrier to be ejected and to thereafter part said thread while clamped, and an independent device to set the movable member in operative position prior to the next change of filling.

12. In a loom provided with filling-replenishing mechanism, the lay, a shuttle adapted to contain a supply of filling, a thread-parter and a thread-clamp, each including a fixed member, a common movable member having a parting edge and a clamping-face, and provided with a heel, to be engaged by the lay upon change of filling, the said movable member being thereby actuated to clamp, and

thereafter to part the thread while clamped, and an independent device to move said movable member to open the parter and clamp prior to the next change of filling.

13. In a loom provided with filling-replenishing mechanism, controlling means therefor, a shuttle adapted to carry a supply of filling, a shuttle-feeler, a thread-parter and a thread-clamp mounted on said feeler, and including a relatively movable member common to both parter and clamp, to clamp and part the thread of the filling-carrier to be ejected upon change of filling, means to close said movable member when the parter and clamp are brought by movement of the feeler into position to act upon the thread, and an independent device to set the movable member in readiness to be actuated as the feeler moves into operative position.

14. In a loom provided with filling-replenishing mechanism, a shuttle-feeler having a thread-receiving notch in its end, a fixed parting-blade adjacent the notch, a clamping-jaw also mounted on the feeler, adjacent and parallel to the blade and having a thread-notch in its end, a parting-blade and clamp-jaw, combined, movably mounted on the feeler between the said fixed blade and jaw, the cutting edge of the former being located below the notch in the latter, means to move the shuttle-feeler into operative position prior to a change of filling, to thereby position the parting and clamping devices to act upon the thread of the filling-carrier to be ejected, and means to actuate the combined blade and clamp to clamp said thread between it and the fixed clamping-jaw and thereafter to part said thread while clamped.

15. In a loom provided with automatic filling-replenishing mechanism, means, including two relatively fixed members, and a third, movable member cooperating with each, to successively positively clamp and part the thread of the filling-supply to be abandoned, and means to operate said movable member upon replenishment of filling.

16. In an automatic filling-replenishing loom, an instrumentality bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, means to effect positive clamping of the thread and subsequent parting thereof, and means to move said instrumentality toward the edge of the cloth while the thread remains clamped.

17. In an automatic filling-replenishing loom, means bodily movable in a diagonal path, upon filling replenishment, to act upon the thread of the filling-supply to be abandoned, to positively clamp and thereafter part the thread, the return of said means to normal, inoperative position toward the edge of the cloth preventing breakage of the positively-clamped end of thread.

18. In an automatic filling-replenishing loom, a shuttle to contain a supply of filling, a shuttle-feeler, movable into operative posi-

tion prior to filling change, parting and clamping means, mounted on the feeler and movable therewith into position to act upon the thread of the filling-carrier to be ejected, and an instrumentality to effect movement of said means toward the shuttle when the feeler is moved into operative position and upon return of the latter to normal position to move said means toward the edge of the cloth, to prevent breakage of the clamped end of filling.

19. In an automatic filling-replenishing loom, a shuttle adapted to contain a supply of filling, a shuttle-feeler, movable into operative position upon filling change, a connected thread parter and clamp, movable with, and also laterally toward and from, the feeler, means to effect such lateral movement away from the cloth as the feeler is operatively positioned and to effect reverse movement as the feeler resumes its normal position, to prevent breakage of the parted but clamped filling end, and means to actuate successively the clamp and parter, to clamp and thereafter part the thread of the filling-carrier to be ejected.

20. In a loom provided with filling-replenishing mechanism, a thread-cutting temple, a swinging support governed by said mechanism, a thread-parter and a thread-clamp, mounted on and laterally movable relatively to said support, a common, movable parting-blade and clamping-jaw, forming part of the parter, and clamp, the latter being bodily moved by the support into position to act upon the filling-thread upon actuation of the replenishing mechanism, means to operate the blade-jaw to clamp and then part the thread, and means to move the clamp and parter laterally toward the cloth upon return of the swinging support to normal position, to thereby bring the still clamped filling end into position, without breakage, to be severed by the temple-cutter.

21. In a loom provided with automatic filling-replenishing mechanism, means operative upon filling change to clamp and part the old filling-thread adjacent the shuttle; and means to thereafter part it adjacent the cloth, means to bodily move the clamping and parting means in a diagonal path into and out of normal position, to bring the filling end into range of the parting means upon bodily return of the parting and clamping means to normal position, to prevent strain upon the positively-clamped filling end, and a thread-catcher to engage the thread prior to parting thereof adjacent the cloth, thereby preventing weaving in of the severed piece of thread.

22. In a loom provided with automatic filling-replenishing mechanism, a temple thread-cutter, a thread parting and clamping device bodily movable into operative position to engage the spent filling adjacent the shuttle prior to actuation of the replenishing mechanism, a stationary thread-catcher located between the temple thread-cutter and the parting and clamping device, and means to actu-

ate said device to clamp and thereafter to part the spent filling while clamped, the return of the said device to normal position carrying the still clamped filling end into engagement with the thread-catcher, and into the range of the temple thread-cutter.

23. In a loom provided with filling-replenishing mechanism a temple thread-cutter, a rocking support, a thread parter and clamp mounted thereon and movable, upon action of the said replenishing mechanism, into position to clamp and part the spent filling-thread adjacent the shuttle, a stationary thread-catcher to engage the filling end between the cloth and the shuttle, said thread-catcher including opposed jaws having their inner faces in contact with each other, and means to gradually work the filling end toward the outer ends of the jaws to be discharged therefrom, the inner ends of the jaws being flared to receive the thread.

24. In an automatic filling-replenishing loom, a temple thread-cutter, a thread-parter and a thread-clamp bodily movable upon replenishment of filling into position to act upon the spent filling-thread to clamp and thereafter part it near the shuttle, the parter and clamp including a common movable blade-jaw, means acting through the latter to successively clamp and part the thread near the shuttle, and a stationary thread-catcher including yieldingly-contacting jaws to receive the filling end between the cloth and shuttle.

25. In a loom provided with automatic filling-replenishing mechanism, a rocking support provided with a laterally-extended stud, a thread-parter, and a thread-clamp mounted upon said stud, and movable thereupon toward and from the support, means operative upon a change of filling to move the latter and bring the parter and clamp bodily into position to act upon the spent filling-thread between the cloth and the shuttle, means to clamp and thereafter to part the thread while said parter and clamp are nearer the shuttle, and means to move the parter and clamp laterally upon the stud and toward the cloth, as the rocking support returns to normal position, and a device to part the thread adjacent the cloth, such return movement of the rocking support while the filling-thread is clamped moving the latter into the range of the second parting device, the lateral movement of the clamp toward the cloth preventing undue tension upon and breakage of the clamped filling end prior to its severance adjacent the cloth.

26. In an automatic filling-replenishing loom, an instrumentality bodily movable upon replenishment of filling into position to act upon the thread of the filling-supply to be abandoned, said means including fixed parting and clamping members, and a common cooperating, movable member, means to effect through said movable member positive clamping of the thread and subsequent parting

thereof, and means to move said instrumentality toward the edge of the cloth while the thread remains clamped.

27. In an automatic filling - replenishing
5 loom, means bodily movable in a diagonal
path, upon filling replenishment, to act upon
the thread of the filling-supply to be abandoned,
said means including fixed members and a common
10 cooperating and relatively movable member, to positively
clamp and thereafter part the thread, the return of
said means to normal, inoperative position toward
the edge of the cloth preventing breakage of the
positively-clamped end of thread.

15 28. In a loom, a shuttle, and a shuttle feeler

or detector having in its end a substantially square notch to receive the point of the shuttle if the latter is improperly boxed, the shape of the notch reducing to a minimum the contact of its edges with the round shuttle-point, 20 to thereby increase the clearance should the filling-thread enter the notch.

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

CLARE H. DRAPER.

Witnesses:

GEORGE OTIS DRAPER,
ERNEST W. WOOD.