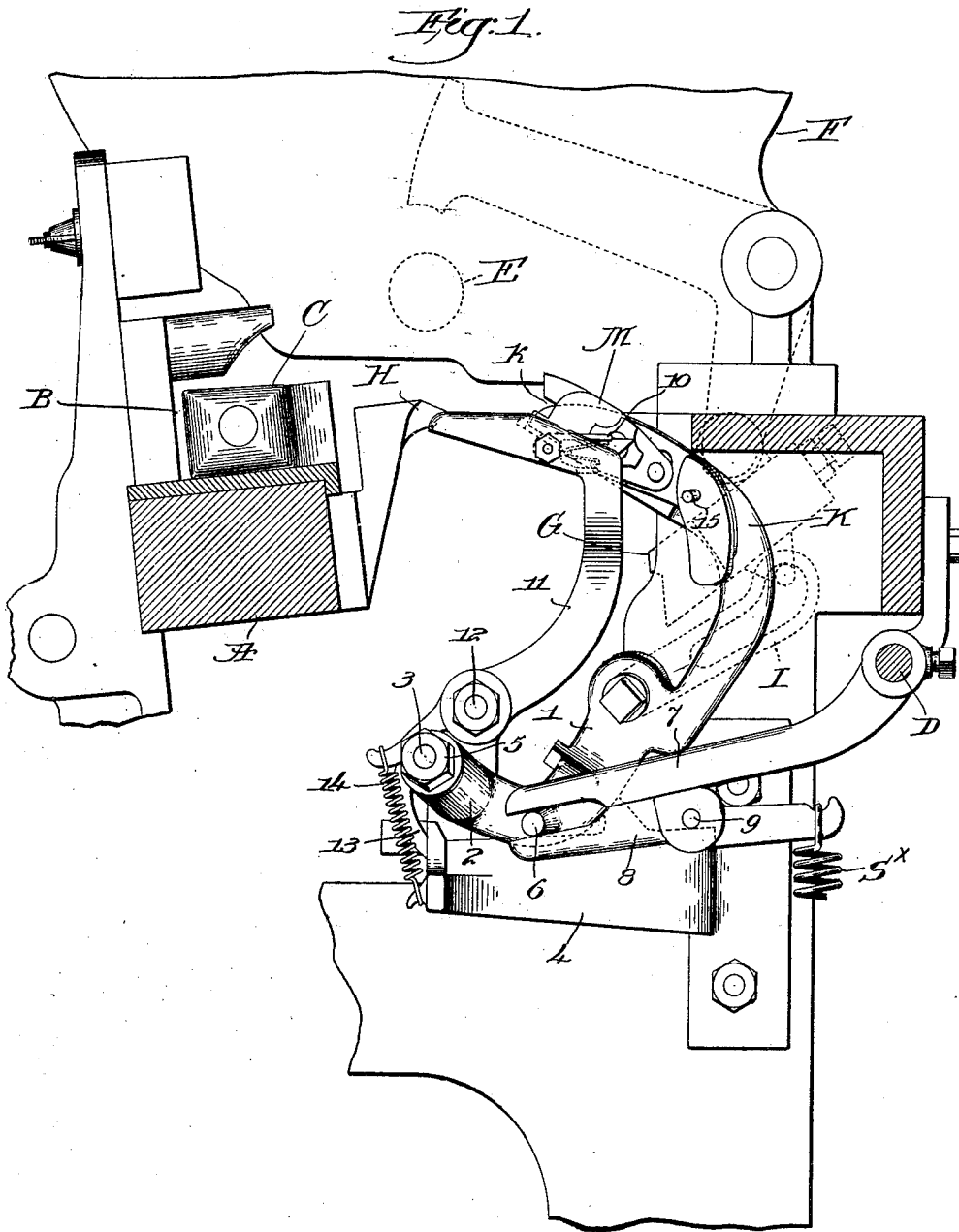


931,913.

Patented Aug. 24, 1909.
 2 SHEETS—SHEET 1.



Witnesses,
Edward H. Allen,
Joseph M. Ward

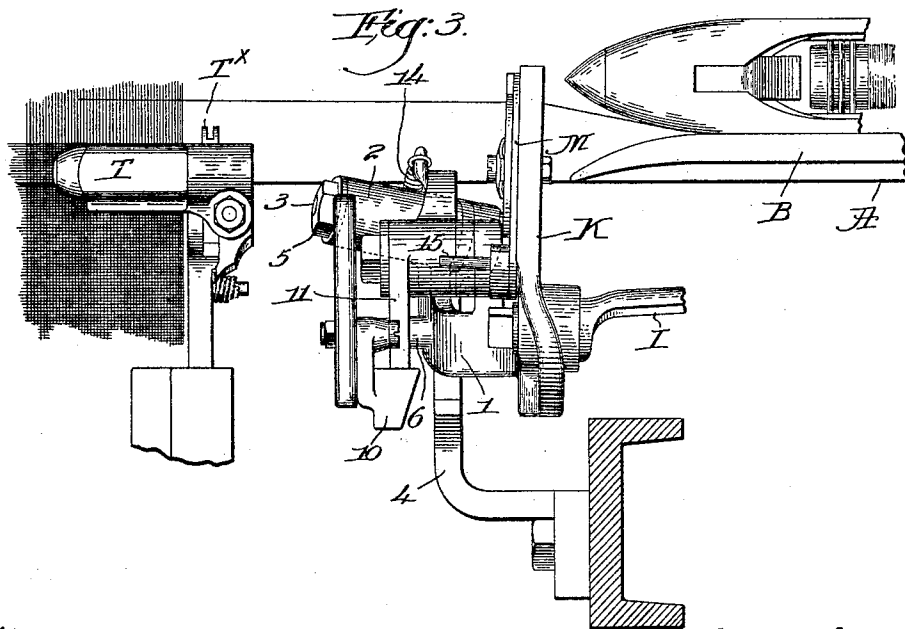
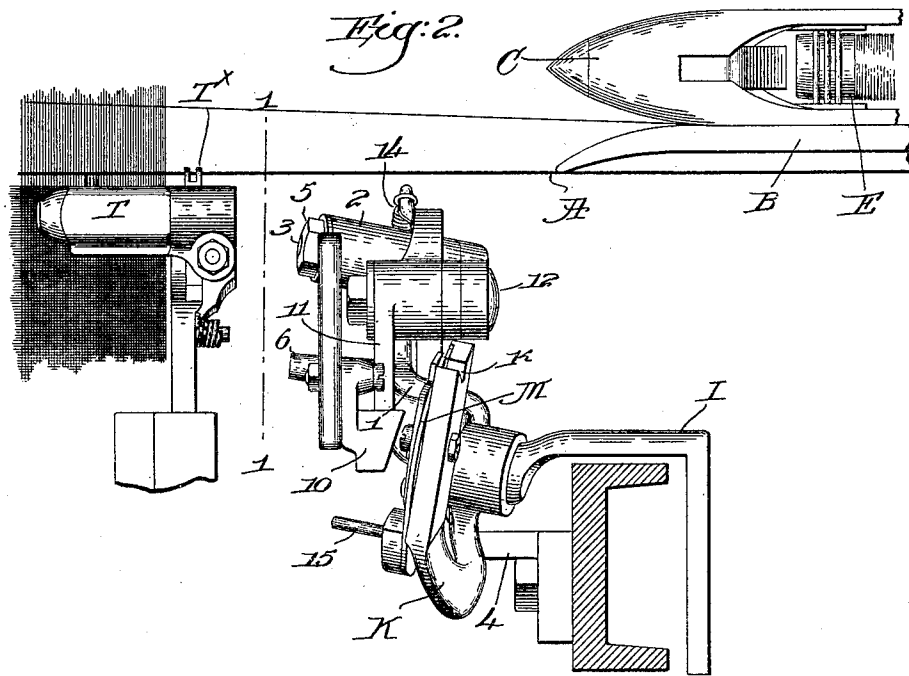
Inventor,
Walter E. Clifford,
by Henry Stegman attys.

W. E. CLIFFORD.
 THREAD PARTING MECHANISM FOR LOOMS.
 APPLICATION FILED MAR. 26, 1909.

931,913.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 2.



Witnesses,
 Edward F. Allen.
 Joseph M. Ward.

Inventor,
 Walter E. Clifford,
 by *Carroll & Company Attys.*

UNITED STATES PATENT OFFICE.

WALTER E. CLIFFORD, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

THREAD-PARTING MECHANISM FOR LOOMS.

931,913.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed March 26, 1909. Serial No. 485,882.

To all whom it may concern:

Be it known that I, WALTER E. CLIFFORD, a citizen of the United States, and 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 drawing, is a specification, like characters on the drawing representing like parts.

In looms wherein the working shuttle is provided automatically with fresh filling prior to complete exhaustion of the filling supply then in the shuttle mechanism is provided to clamp and part the old filling-end which extends from the cloth to the shuttle containing the filling-supply about to be abandoned. The parting is effected near the shuttle and the clamped end is then drawn forward to bring it into the range of a temple thread-cutter, to be severed thereby close to the cloth. Breakage of the clamped filling-end is prevented by causing the clamping and parting instrumentality to move bodily toward the edge of the cloth as it is moved forward to normal position, as in patents No. 683,423 to Draper, dated September 24, 1901 and No. 897,404 to Rhoades, dated September 1, 1908 to which reference may be had. In the latter patent the thread clamp and parter are mounted on a shuttle-feeler which is pivoted on a swinging carrier, the latter being fulcrumed at right angles to the pivot of the shuttle-feeler, and by means of a cam and follower the lateral movement of the shuttle-feeler is effected as it is swung forward or backward with the carrier.

My present invention relates to thread parting mechanism of this general type, and it has for its object the production of very simple means for effecting the desired movement of the thread clamping and parting instrumentality with an easy action requiring a small expenditure of power.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims, one practical embodiment of my invention being illustrated in the drawings.

Figure 1 is a transverse section on the line 1—1, Fig. 2, of a sufficient portion of an automatic filling replenishing loom with one

form of my present invention embodied therein, the parts being shown in normal position; Fig. 2 is a top plan view of the principal part of the mechanism shown in Fig. 1 and in the same position; Fig. 3 is a similar view but with the lay farther forward and with the thread clamping and parting instrumentality in operative position and at its greatest distance from the edge of the cloth.

Referring to the drawings A is the lay, B a shuttle-box thereon at the replenishing side of the loom, C the working shuttle of the automatically-threading type, and D is the controlling rock-shaft which governs the operation of the filling replenishing mechanism, indicated in general at F, Fig. 1, and arranged to insert automatically a filling-carrier or bobbin E, shown in dotted lines, into the shuttle when filling replenishment is called for, all of such parts being of substantially usual construction and operating in a manner well known to those familiar with the art.

At the time when filling replenishment is to be effected the dog G, Fig. 1, is swung into position to be engaged by the bunter H on the lay, the movement of the dog being controlled by a cam-slotted arm I fixedly secured to the shuttle-feeler K, bent rearwardly at its upper end to extend across the lay in front of the mouth of the shuttle-box B if the shuttle is boxed properly for replenishment, as shown in Fig. 3.

The shuttle-feeler is notched at its tip, at $\frac{1}{2}$, to receive the old filling-end when the feeler is moved into operative position, and an instrumentality to clamp and part such filling-end is mounted upon the feeler and is indicated at M, the instrumentality herein illustrated being substantially that shown in Patent No. 834,269 granted October 30, 1906, to Cunniff and operating as therein set forth.

I have herein shown the shuttle-feeler as rigidly connected with and forming part of a bent carrier 1 having at its lower end an elongated, lateral hub 2 which is fulcrumed on a fixed skew-pivot 3 sustained by a bracket 4 bolted to the loom-side, a nut 5 preventing displacement of the hub.

As is shown in the drawings the stud or pivot 3 is skewed or oblique with respect to both the length and depth of the loom, it being inclined downwardly toward the re-

plenishing side of the loom and also toward the front of the loom, in order to give to the shuttle-feeler and parts mounted thereon not only a swinging movement backward and forward but also a lateral movement, the resultant movement of the clamping and parting instrumentality being in a curved diagonal path.

Referring to Fig. 2, showing the parts in normal position, it will be seen that the free end of the feeler K on which is mounted the clamping and parting means is considerably nearer the edge of the cloth than when it is positioned to clamp and part the old filling-end, as in Fig. 3, and hence after the filling-end has been clamped and parted it will be slackened slightly by return of the shuttle-feeler to normal position. This prevents any straining of the thread, tending to break it, as it is moved into the range of the thread-cutter T* on the temple T, Figs. 2 and 3.

By giving the pivot 3 the double inclination or skew I secure not only the diagonal movement and desired positioning of the thread clamping and parting instrumentality but I bring the shuttle-feeler across the lay in front of the shuttle-box substantially at right angles to the lay, as shown in Fig. 3, and all with a single pivot or fulcrum upon or about which the shuttle-feeler is moved into and out of operative position. The structure is thus simplified, an easy movement is provided, requiring the expenditure of very little power, and the use of a cam and follower or similar device is obviated.

Swinging movement of the carrier 2 and the shuttle-feeler is effected by an operative connection between the rock-shaft D and the carrier, the latter having a pin 6 embraced by jaws formed by an arm 7 fast on said rock-shaft D and a shorter jaw-arm 8 pivoted at 9 on the arm 7 and acted upon by a spring S*, Fig. 1, substantially as in the Northrop patent No. 677,096 dated June 25, 1901.

The clamping and parting instrumentality is closed when the feeler is in normal position, Figs. 1 and 2, and is set or opened when the feeler is swung rearward by a setting device 10 mounted on an upturned arm 11 fulcrumed at 12 on the bracket 4, a stop-lug 13 on said arm being normally held against the bracket by a spring 14.

The setting device 10 coöperates with a lateral pin 15 on a member of the clamping and parting instrumentality to open the same, and as the lay completes its forward movement said instrumentality is operated to clamp and part the thread, the pin 15 wiping over the setting device 10 as the feeler returns to normal position, all substantially as in the Draper patent No. 683,423 before referred to.

By making the carrier hub 2 and the skew-pivot 3 quite long and relatively heavy a firm and accurate control is exerted upon the shuttle-feeler and parts carried thereby, with large bearing surfaces, so that any tendency to twisting or lost motion is obviated.

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 shuttle-feeler, means carried thereby to clamp and part the thread of the filling-supply to be abandoned, a swinging carrier on which the shuttle-feeler is rigidly mounted, a fixed, skew-pivot on which the carrier swings, and means to effect the swinging movement of the carrier, the skew-pivot thereof causing the shuttle-feeler and the means carried by it to move forward and also toward the edge of the cloth as the carrier returns to normal position after replenishment.

2. In an automatic filling-replenishing loom, a swinging carrier movable rearwardly prior to filling replenishment, a fixed pivot for the carrier, downwardly inclined toward the replenishing side of the loom, a shuttle-feeler fixedly mounted on the carrier and provided with means to clamp and part the thread of the filling-supply to be abandoned, and means to swing the carrier upon its pivot, the inclination of the latter causing the forward swing of the carrier to move the shuttle-feeler laterally toward the edge of the cloth.

3. In an automatic filling-replenishing loom, means bodily movable upon filling replenishment into position to clamp and part the thread of the filling-supply to be abandoned, a swinging support for said means, a fixed pivot for the support, and mechanism to swing the support upon its pivot, the pivot being inclined downward toward the replenishing side of the loom and also toward the front of the loom, whereby swinging movement of the support to normal position moves the clamping and parting means in a diagonal path toward the edge of the cloth.

4. In an automatic filling-replenishing loom, means to clamp and part the thread of the filling-supply to be abandoned, a support for said means, having an elongated hub, a fixed pivot on which said hub turns to swing the support, said pivot being inclined downward toward the replenishing side of the loom and also frontward, to effect movement of the clamping and parting means in a diagonal path to operative position and toward the edge of the cloth upon return to normal position, and means to cause pivotal movement of the support before and after replenishment.

5. In an automatic filling-replenishing loom, in combination, an instrumentality

adapted to clamp and part the thread of the
filling-supply to be abandoned, a support
for said instrumentality, and means, includ-
ing a single fixed fulcrum, to rock the sup-
5 port and effect movement of the clamping
and parting instrumentality into position to
clamp and part the thread of the filling-sup-
ply to be abandoned and to move such in-
strumentality bodily toward the edge of the

cloth upon return of the support to normal 10
position.

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

WALTER E. CLIFFORD.

Witnesses:

ALEXANDER P. DAVIS,
E. D. OSGOOD.