

S. D. EUBANKS & J. E. McBROOM.
 AUTOMATIC FILLING REPLENISHING LOOM.
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1,047,186.

Patented Dec. 17, 1912.

Fig. 1.

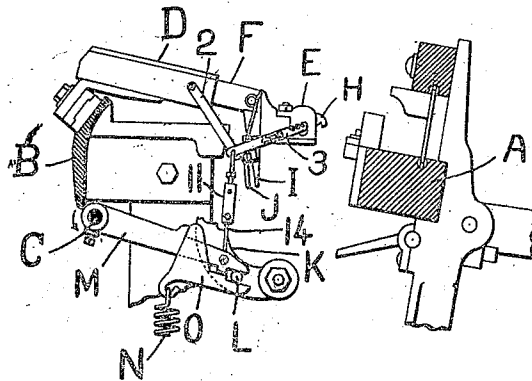


Fig. 2.

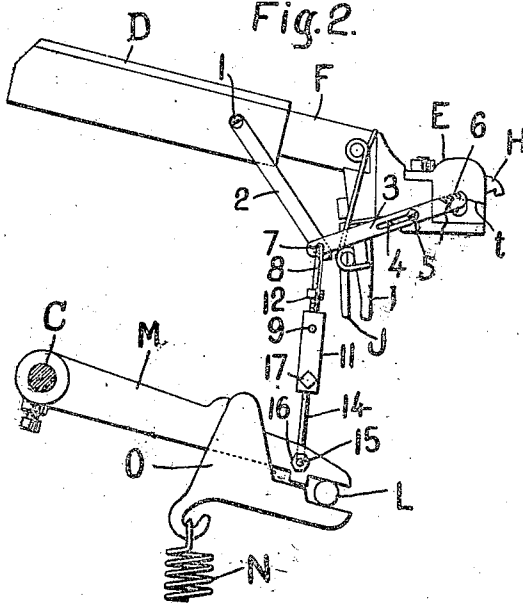
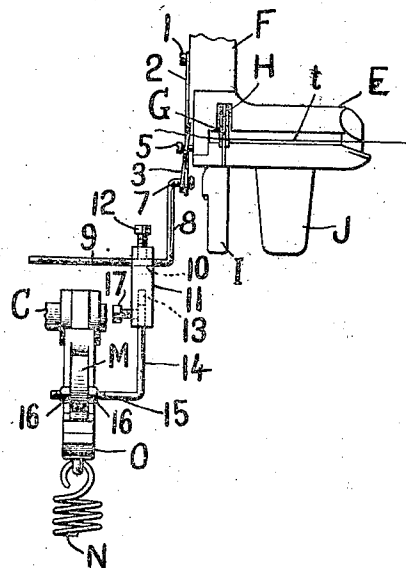


Fig. 3.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC FILLING-REPLENISHING LOOM.

1,047,186.

Specification of Letters Patent.

Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that we, SAYERS D. EUBANKS and JAMES E. McBROOM, both citizens of the United States, and residents of West Durham, county of Durham, State of North Carolina, have invented an Improvement in Automatic Filling-Replenishing 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 automatic looms wherein the filling is replenished automatically in the working shuttle, and wherein the temple at the replenishing side of the loom is provided with a thread-cutter to cut the old or spent filling-end when filling replenishment is effected.

It is desirable that such filling-end shall be cut promptly and also that it shall be drawn away from the path of the shuttle, particularly if the filling breaks or runs out as the shuttle is about to enter the box at the replenishing side of the loom, as otherwise the replenished shuttle is apt to carry such filling-end back into the cloth and make an imperfection therein.

Our present invention has for its object the production of simple and novel means to catch the old filling-end when replenishment is called for and to not only withdraw the old end from the path of the shuttle but to position it promptly and surely for cutting by the temple thread-cutter.

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 a portion of an automatic filling replenishing loom of well known construction, taken between the hopper of the replenishing mechanism and the thread-cutting temple at the replenishing side, with our invention applied thereto and in normal position; Fig. 2 is an enlarged side view of the temple, the thread-catcher, and parts adjacent thereto; Fig. 3 is a rear view of the devices shown in Fig. 2.

Referring to Fig. 1, the lay A, breast-beam B, the rock-shaft C which controls the operation of the filling replenishing mechanism (the latter being of the well known Northrop type such as is shown in United

States Patent No. 529,940, dated November 27, 1894), the thread-cutting temple at the replenishing side of the loom and comprising a stand D, temple E having a shank F mounted to reciprocate in the stand, and the fixed and movable blades G, H, Fig. 3, constituting the thread-cutter, may be and are all of well known construction, the blade H having a depending heel I and the temple having a heel J, both of which are adapted to be struck by the advancing lay, in usual manner. A temple of this general type is shown in United States Patent to Draper and Stimpson No. 585,465 dated June 29, 1897.

A portion of the shuttle-feeler K, having a stud L, is shown in Fig. 1, said stud being engaged by the arm M fast on the rock-shaft C and which is normally held depressed by a spring N connected with the jaw O hung on the arm M.

In accordance with our invention we pivot at 1 on the stand D a radius member or link 2, the lower, rear end thereof being pivotally connected with a thread-catcher, shown as an elongated, flat bar 3 having a longitudinal slot 4 through which extends the shank of a headed stud 5 projecting laterally from the end of the temple E at the cutting end thereof. The upper edge of the thread-catcher 3 is notched at 6 adjacent its rear end, and said thread-catcher can rock on the stud 5 and it can also slide longitudinally thereon. The adjacent apertured ends of the radius member 2 and thread-catcher 3 are pivotally connected by the laterally bent and headed upper end 7 of a link 8 having a long lateral foot 9 parallel to the part 7 and extended oppositely therefrom. Said foot extends through a transverse hole 10 in a block 11, and is held fixed therein in laterally adjusted position by a set screw 12. The lower end of said block has a longitudinal socket 13 to receive the upright part 14 of an L-shaped bar, the lower end 15 of which is threaded and extended through a hole in the arm M, nuts 16, Figs. 2 and 3, retaining the end 15 of the bar in place, while a set-screw 17 holds the upright part 14 of said bar in adjusted position in the socket 13. The link 8, block 11, bar 14, 15, and the arm M constitute an operating connection between the controlling rock-shaft C and

the thread-catcher, as will be apparent. When filling-replenishment is called for said rock-shaft is turned in the direction of the arrow, Fig. 1, elevating the free end of the arm M, and the operating connection serves to lift the lower, forward end of the thread-catcher 3, swinging it on the stud 5, but the radius member 2 compels the catcher 3 to also slide longitudinally and rearward, so that its notched end is projected beyond the temple and under the old filling-end as the lay beats up. The filling-end is caught in the notched and projected end of the thread-catcher, and as the rock-shaft C returns to normal position after replenishment the thread-catcher is retracted and the other parts connected therewith return to the position shown, drawing the old filling-end *t*, Figs. 2 and 3, forward away from the shuttle path and into position to be cut by the blades G, H on the next beat up of the lay. The cut end of filling is held by the thread-catcher away from the shuttle so that after replenishment the shuttle cannot carry the end back into the cloth.

It will be understood that the temple E is moved forward on each beat up by engagement of the lay A with the temple heel J, and at such time the thread-catcher 3 is rocked on the end 7 of the link 8, the slot 4 and stud 5 permitting such movement. When the temple E is adjusted laterally, for wider or narrower cloth, the set-screw 12 is loosened and the foot 9 of the link is moved laterally in the block 11 to compensate for the adjustment of the temple.

By the vertical adjustment effected between the block 11 and the bar 14, 15 the proper or desired throw is imparted to the thread-catcher when the controlling rock-shaft C is turned, as will be manifest.

The radius member 2 not only serves to steady the thread-catcher but it also provides for the longitudinal projecting and retracting movements thereof into and out of thread-catching position at the proper times.

The construction of the apparatus is simple, its operation is direct and prompt, and the filling-end is brought surely and quickly into the range of the temple thread-cutter to be cut thereby when filling replenishment is brought about.

Various changes in details of construction and arrangement may be made by those skilled in the art without departing from the spirit and scope of our invention as set forth in the annexed claims.

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

1. In an automatic filling replenishing loom, having a rock-shaft to control the replenishing operation, in combination, a

temple at the replenishing side of the loom provided with a thread-cutter, a stand in which the shank of the temple reciprocates, a thread-catcher slidably connected with the temple, a link pivotally connected at its ends with the temple stand and thread-catcher, respectively, and an operating connection between the controlling rock-shaft and the pivot connecting the link and thread-catcher, rotation of said rock-shaft when filling replenishment is called for acting through said operating connection to move the thread-catcher rearward and into engagement with the old filling-end, return of the rock-shaft to normal position retracting the thread-catcher and causing the latter to position the filling-end to be acted upon by the temple thread-cutter.

2. In a loom having automatic filling replenishing mechanism, and a rock-shaft to control the time of operation thereof, in combination, a thread-cutting temple at the replenishing side of the loom, a notched thread-catcher having a pivotal and longitudinally slidable connection with the temple adjacent the thread-cutter, a radius member pivotally connected at one end with the thread-catcher and having a fixed fulcrum at its other end, and an operating connection between the radius member and the controlling rock-shaft, rotative movement of the latter when filling replenishment is called for swinging the radius member and projecting the thread-catcher rearward beyond the temple to engage the old filling-end, movement of the rock-shaft to normal position retracting said thread catcher and moving the filling-end into position to be acted upon by the temple thread-cutter.

3. In a loom provided with automatic filling replenishing mechanism, and a temple at the replenishing side of the loom having a thread-cutter, in combination, a thread-catcher having a pivotal and longitudinally slidable connection with the temple and notched at its rear end, and means actuated when replenishment is called for to swing upward the front end of the thread-catcher and then move the latter rearward beyond the temple to engage the old filling-end adjacent the temple, said means returning to normal position thereafter and retracting the thread-catcher to bring the filling-end caught thereby into position to be cut by the temple thread-cutter.

4. In a loom provided with automatic filling replenishing mechanism, and a temple at the replenishing side of the loom having a thread-cutter, in combination, a thread-catcher having a pivotal and longitudinally slidable connection with the temple and notched at its rear end, and laterally and vertically adjustable means actuated when replenishment is called for to swing upward the front end of the thread-catcher and then

move the latter rearward beyond the temple to engage the old filling-end adjacent the temple, said means returning to normal position thereafter and retracting the thread-catcher to bring the filling-end caught thereby into position to be cut by the temple thread-cutter, the lateral adjustment of said means permitting lateral adjustment of the temple and the vertical adjustment serving to vary the extent to which the thread-catcher is projected.

5. In an automatic filling replenishing loom, in combination, a reciprocating temple at the replenishing side of the loom, a thread-cutter carried by the temple between its inner and outer ends and comprising a fixed blade and a relatively movable co-operating blade, a thread-catcher separate from and movable independently of each blade of the thread-cutter, mounted at a distance therefrom on the outer end of the

temple, and movable with and also relatively to the temple, and means to effect movement of the thread-catcher relatively to the blades of the thread-cutter and the temple when replenishment is called for, to engage the old filling-end at a point at one side of the thread-cutter, said means thereafter effecting return of the thread-catcher to normal position to place the filling-end engaged thereby in the range of and to be acted upon promptly by the temple thread-cutter.

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

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Witnesses:

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