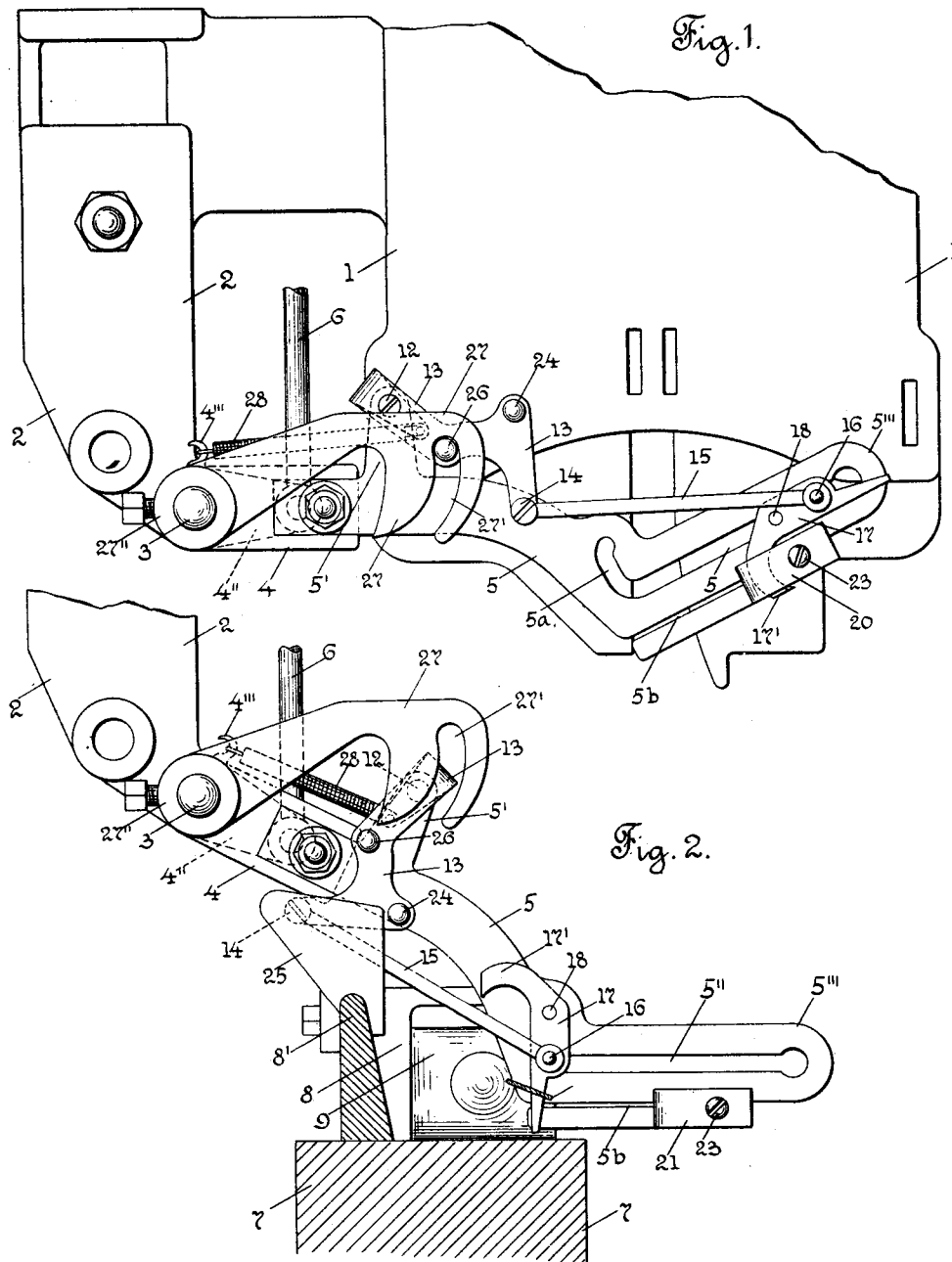


E. H. RYON.
FILLING THREAD CUTTING MECHANISM FOR WEFT REPLENISHING LOOMS.
APPLICATION FILED JUNE 22, 1911.

1,048,591.

Patented Dec. 31, 1912.

2 SHEETS-SHEET 1.



Witnesses
M. Bredt.
W. Haas.

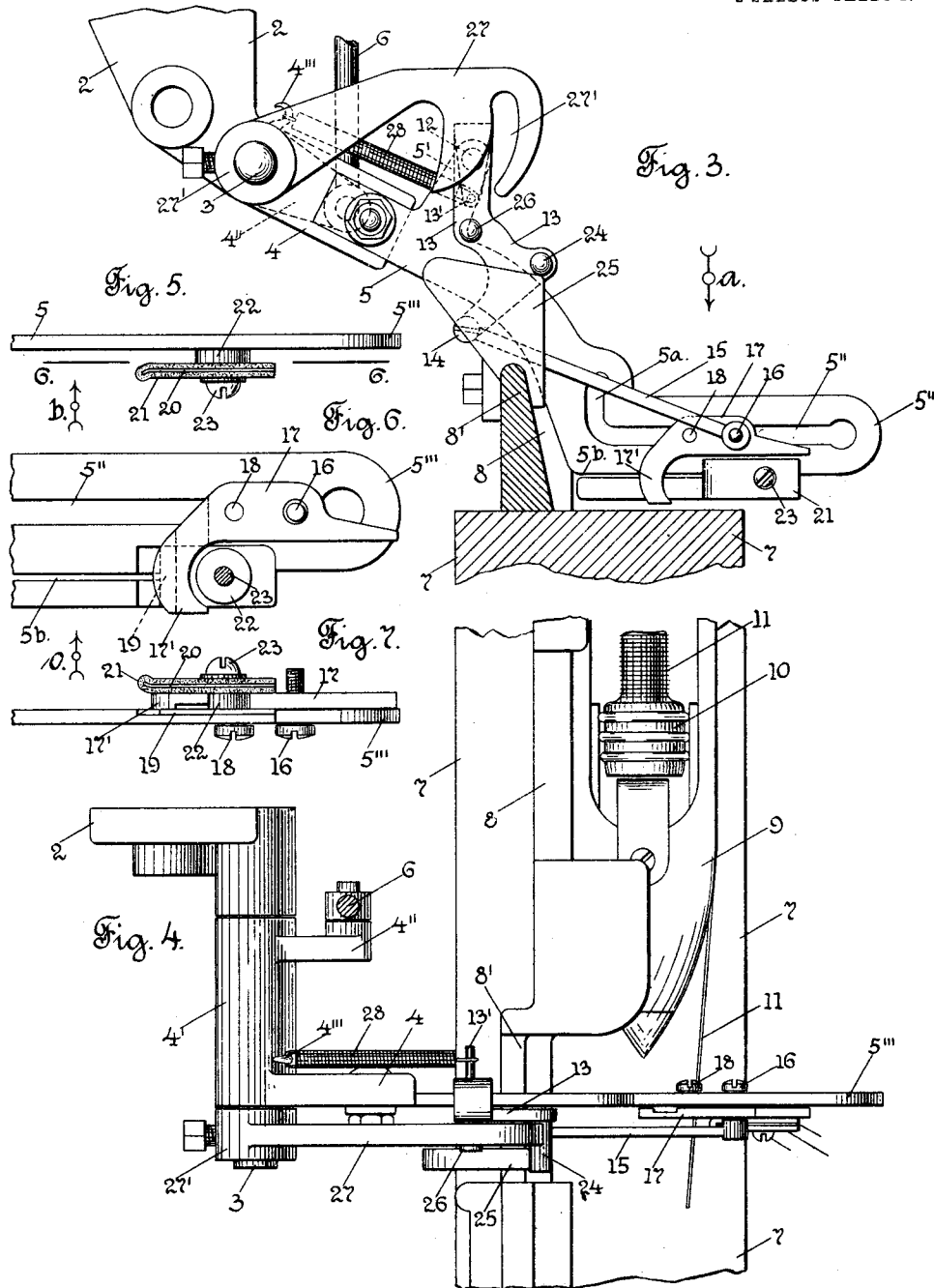
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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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FILLING-THREAD-CUTTING MECHANISM FOR WEFT-REPLENISHING LOOMS.

1,048,591.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed June 22, 1911. Serial No. 634,729.

To all whom it may concern:

Be it known that I, EPPA H. RYON, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Filling-Thread-Cutting Mechanism for Weft-Replenishing Looms; of which the following is a specification:

My invention relates to filling thread cutting mechanism for weft replenishing looms, which have magazines to hold bobbins or filling carriers, and transferring mechanism to transfer a bobbin from the magazine into the active shuttle to take the place of a substantially exhausted bobbin in the shuttle.

My filling thread cutting mechanism is adapted to cut the filling thread on the substantially exhausted bobbin, which is to be removed from the active shuttle, and a clamping device is adapted to hold the end of the filling thread which passes from the cutter to the selvage or border of the fabric. The filling thread cutting mechanism of the class referred to is ordinarily connected with some part of the transferring mechanism, and is brought into operation, through the operation of some part of the transferring mechanism.

In my present improvements my filling thread cutting mechanism is attached to the ordinary shuttle feeler, and is brought into operation through the transferring mechanism, and through the movement of the lay, when the lay advances into its front position, after the shuttle feeler is brought into operative position through the operation of the transferring mechanism.

The object of my invention is to provide a filling thread cutting mechanism for weft replenishing looms of the class referred to of improved construction.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

I have only shown in the drawings a detached portion of a loom of the class referred to, and the shuttle feeler, with my improvements in filling thread cutting mechanism applied thereto, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawings,—Figure 1 is an inner end view of a detached portion of

the magazine, and the shuttle feeler in its inoperative position, with my improvements attached thereto. Fig. 2 shows the shuttle feeler shown in Fig. 1, in its operative position; also shows a portion of the lay in section. Fig. 3 corresponds to Fig. 2, but shows some of the parts shown in Fig. 2, in a different position. Fig. 4 is a plan view of the parts shown in Fig. 3, looking in the direction of arrow *a*, same figure. Fig. 5 is, on an enlarged scale, an upper edge view of the end of the shuttle feeler and the clamping device thereon. Fig. 6 is a section, on line 6, 6, Fig. 5, looking in the direction of arrow *b*, same figure; also shows the cutter hook, detached, and, Fig. 7 is a lower edge view of the feeler, with the cutting device thereon, looking in the direction of arrow *c*, Fig. 6.

In the accompanying drawings, 1 is a portion of a stationary magazine, 2 is a stand mounted thereon, which has a stud 3 at its lower end, on which is loosely mounted the hub 4' of an arm 4, which has secured thereto the shuttle feeler 5, see Fig. 4. A second arm 4'' on the hub 4' of the arm 4, has pivotally connected thereto the lower end of an upwardly extending connector 6, which, through the operation of the transferring mechanism, not shown, on the substantial exhaustion of filling in the active shuttle, moves downwardly the shuttle feeler 5 to the position shown in Figs. 2 and 3.

7 is the lay beam, 8 is a portion of a stationary shuttle box on the end of the lay, and 9 a shuttle in said box, 10 is a bobbin in the shuttle 9, having filling 11 thereon, which passes from the shuttle 9 to the selvage of the woven fabric, not shown.

All of the above mentioned parts, except the shuttle feeler 5, may be of the usual and well known construction.

I will now describe my improvements in filling thread cutting mechanism.

The shuttle feeler 5, which, upon the substantial exhaustion of a bobbin, is operated by the transferring mechanism to move downwardly, from the position shown in Fig. 1, to the position shown in Fig. 2, to feel for and indicate the proper position of the active shuttle 9, has in this instance mechanisms combined therewith, which are adapted to carry the filling thread toward the end of the feeler 5, to be cut.

The feeler arm 5 has in this instance an

upwardly extending projection 5', adapted to carry, on a stud 12, a downwardly extending lever 13. The lower end of the lever 13 has a stud 14, to which is pivotally connected one end of a rod or connector 15. The other end of said rod 15 is connected to the end of a stud or bolt 16, which slides loosely in an elongated slot 5'' in the end 5''' of the feeler 5, which end extends toward the front of the loom. The bolt or stud 16 has loosely pivoted thereon a knife plate 17, which is provided with a stud 18, adapted to move loosely in the slot 5''. Through the travel of the stud 16 in the upwardly extending slot 5^a leading out of the slot 5'', a quarter of a turn is imparted to the knife plate 17, as shown in Figs. 2 and 3.

The knife plate 17 is provided with a hook end 17', which is adapted, on the downward movement of said hook, to catch the filling thread 11^a which passes from the shuttle to the woven fabric, and to carry the thread 11 into a slot 5^b, which is open at its end, and toward a cutter blade 19, see Fig. 7, which in this instance is secured to the end 5''' on the shuttle feeler 5. Through the engagement of the cutter end 17' on the knife plate 17, with the cutter blade 19, the filling 11 which passes from the shuttle to the shuttle feeler 5 is cut.

A steel plate 20, preferably covered with felt, or other suitable material 21, forms in this instance a holding or clamping device, to cooperate with the knife plate 17, for the end of the filling thread 11, which leads from the woven fabric to the cutter. The clamping plate 20 is secured upon a leather washer 22, and above the knife plate 17, by a screw 23.

When the shuttle feeler 5, upon the substantial exhaustion of the filling on the bobbin in the active shuttle, is moved downwardly, the knife plate 17 is in the position shown in Fig. 2. The lever or arm 13 has in this instance a projecting stud 24, which is moved in the path of and is engaged by a projecting plate 25, secured to the rear wall 8' of the shuttle box 8. The lay 7, as it moves forwardly, causes the arm 13, through the projection 25, to operate, and through the intermediate connections to the knife plate 17, causes said plate to operate. The movement of the plate 17 and the hook end 17' thereon, causes the filling thread 11 to be caught and carried into the open slot 5^b. The further movement of the lay causes the shuttle feeler 5 to be engaged by the rear wall 8' of the shuttle box 8, and to be moved upwardly again. The lever 13 has a second stud 26, which moves into a curved slot 27' in an arm 27, which has its hub 27'' secured on the stud 3, see Fig. 1. Through the curved slot 27', the arm 13 is moved to the position shown in Fig. 1, which carries the

knife plate 17, and consequently the filling 11, by the hook end 17' of said knife plate 17, to the cutter and the clamping device above described. A helically coiled contraction spring 28, has one end connected to a pin 13' on the lever 13, and its other end to a lug 4''' on the arm 4, and acts to move backwardly the lever 13 and the knife plate 17 connected therewith, to the position shown in Fig. 2, after the feeler 5 has been moved downwardly again.

It will be understood that the details of construction of my improvements may be varied if desired.

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

1. In mechanism of the class described, a shuttle feeler adapted to be lowered into the path of the active shuttle, said feeler having a guide for the filling thread, a second guide for a pivotally mounted hook, and said pivotally mounted hook having its pivotal support mounted in said second guide, to slide therein, means to move said pivotal support and the hook, and turn the hook on its center, a cutting edge attached to said feeler, a cutting edge on said hook, a clamping surface on said hook, and a clamping surface on said feeler, a lay, and a device on said lay to operate said hook, to cut the filling between the two cutting edges, and to cause one end of the severed filling to be held between said clamping surfaces.

2. In mechanism of the class described, a shuttle feeler, having a guiding surface for a pivotally mounted hook, and said hook having its pivotal support mounted in said guiding surface, to slide therein, means to move said pivotal support and the hook, and turn the hook on its center, and a cutting edge, and a clamping surface on said hook, and a cutting edge, and a clamping surface on said feeler, and means to cause the operation of said hook to catch a filling thread, and cut the same between the cutting surfaces, and to clamp and hold one end of the severed filling.

3. In mechanism of the class described, a shuttle feeler having a guiding surface for a pivotally mounted hook, and said hook having its pivotal support mounted in said guiding surface, to slide therein, means to move said pivotal support and the hook, and turn the hook on its center, a cutting edge and a clamping surface on said hook, a cutting edge, and a clamping surface on said feeler, and means to cause the operation of said hook to catch a filling thread, and cut the same between the cutting surfaces, and to clamp and hold one end of the severed filling, said means including a lay and a device thereon.

4. In mechanism of the class described, a shuttle feeler, a magazine for weft carriers,

connections from said shuttle feeler to said magazine, a pivotally mounted member on said shuttle feeler and movable therewith about a pivotal center, a cutting edge on said pivotally mounted member, a cutting edge on said shuttle feeler, and a clamping surface on said pivotally mounted member, a clamping surface on said shuttle feeler, to cut a filling thread and hold one end of the same, a device on the lay, connections from said pivotally mounted member, said connections to be operated by said device, and a second device having a cam surface to be engaged by a stud on one of said connections to operate said connections.

5. In mechanism of the class described, a shuttle feeler, having a guiding surface for a pivotally mounted hook, and said hook,

and a cutting edge, and a clamping surface on said hook, and a cutting edge, and a clamping surface on said feeler, and means to cause the operation of said hook to catch a filling thread and cut the same between said cutting surfaces, and to clamp and hold one end of the severed filling, said means comprising a connection from said pivotally mounted hook to a pivotally mounted lever and said lever, a device on the lay to engage and move said lever, and a second device having a cam surface to be engaged by a projection on said lever, to operate said lever.

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Witnesses:

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