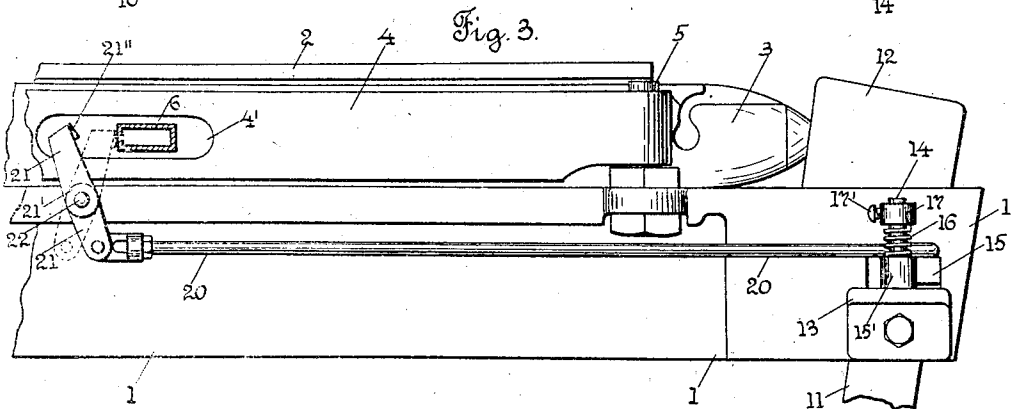
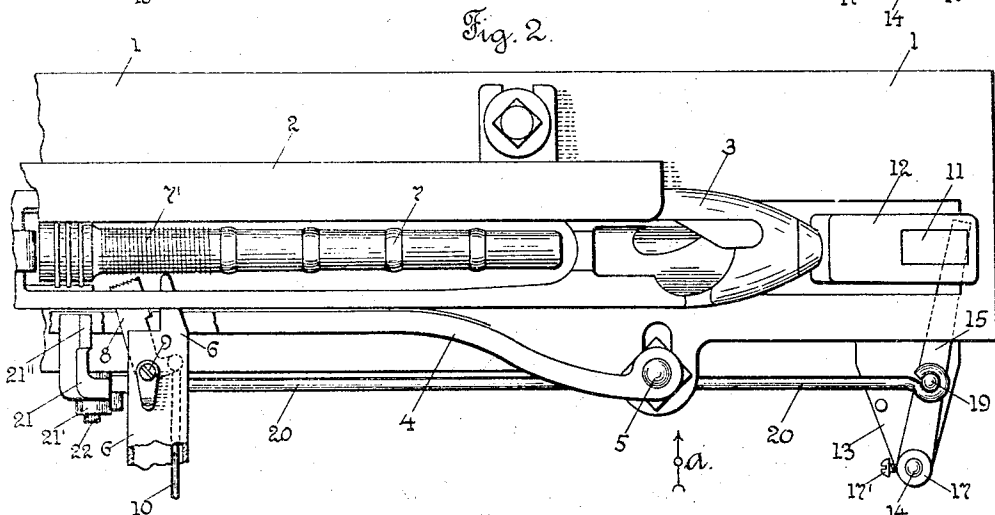
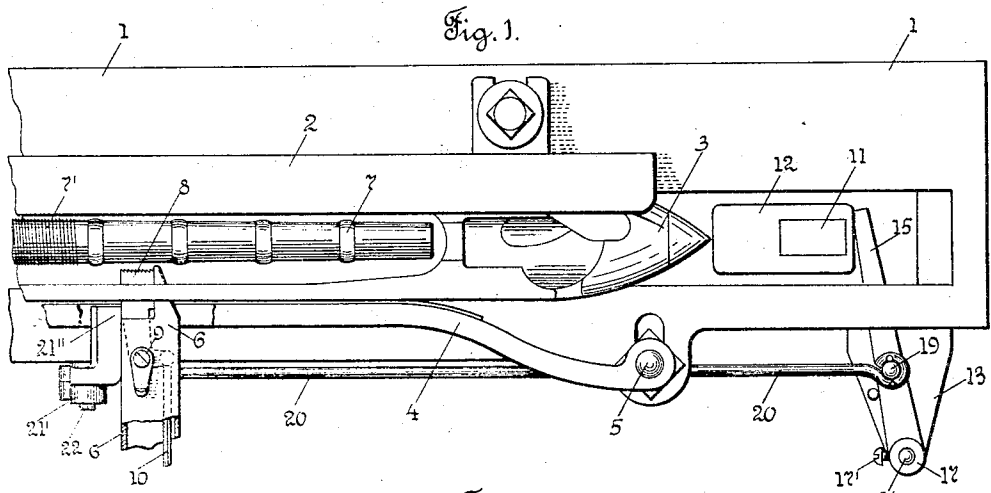


A. F. MORELL.
WEFT REPLENISHING LOOM.
APPLICATION FILED MAR. 2, 1912.

1,041,844.

Patented Oct. 22, 1912.



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UNITED STATES PATENT OFFICE.

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WEFT-REPLENISHING LOOM.

1,041,844.

Specification of Letters Patent.

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Application filed March 2, 1912. Serial No. 681,174.

To all whom it may concern:

Be it known that I, ALFRED F. MORELL, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Weft-Replenishing Looms, of which the following is a specification.

My invention relates to weft replenishing looms, and particularly to weft replenishing looms of the type shown and described in the application for U. S. Letters Patent, Serial No. 588,018, in which, on the substantial exhaustion of filling in the active shuttle, a fresh bobbin or filling carrier is transferred from the magazine into said shuttle on the same pick on which the practical or substantial exhaustion of filling on the bobbin is indicated by the filling feeler or detector, without the shuttle being carried to the shuttle box end of the loom and returned to the magazine end of the loom before the filling is transferred.

The object of my invention is to provide mechanism, which will prevent the filling feeler mechanism from indicating the substantial exhaustion of filling on the bobbin in the active shuttle, in case the active shuttle is not properly boxed, or is not in its proper position relative to the magazine of the weft replenishing mechanism.

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 the lay end of a loom, and a portion of the filling feeler mechanism of the type shown and described in U. S. Letters Patent, No. 972,722, which filling feeler mechanism comprises a reciprocating member or feeler, which is adapted to feel through an opening in the front wall of a shuttle to engage with the filling on the bobbin in the active shuttle. On the substantial exhaustion of the filling on the bobbin in the active shuttle, a second member of the filling feeler mechanism, which is pivoted on the reciprocating member, moves sidewise on its pivotal support, and through connections to the weft replenishing mechanism, puts into operation said mechanism to supply a fresh bobbin from the magazine to the active shuttle in the usual way. In said Patent, No. 972,722, there is provision for withdrawing the detector from the shuttle at the

time of replenishment, said provision comprising a downwardly extending arm connected with the rocking transferrer arm, which first mentioned arm has a projection thereon which extends in the path of and is adapted to engage a side projection on the reciprocating feeler slide.

My improvements as herein shown and described are combined with the filling feeler mechanism of the type above referred to.

Referring to the drawings:—Figure 1 is a plain view of the right hand end of the lay of a loom, with a stationary shuttle box thereon, and my improvements applied thereto, and showing the shuttle not fully boxed. Fig. 2 corresponds to Fig. 1, but shows some of the parts shown in Fig. 1, in a different position, and the shuttle fully boxed, and, Fig. 3 is a front view of the parts shown in Fig. 1, looking in the direction of arrow *a*, same figure.

In the accompanying drawings, 1 is the right hand end of the lay of a loom, carrying a stationary shuttle box or cell 2, for a shuttle 3, in the usual way.

4 is the shuttle binder, which is pivoted at its outer end on a stud 5 on the front side of the shuttle box. The shuttle binder has an opening 4 therethrough for the entrance of the feeler member 6, on the forward movement of the lay, to engage with the filling 7' on the bobbin 7 in the shuttle 3.

Within the hollow part of the feeler member 6 is located the second member of the feeler mechanism, which is shown and described in the U. S. Letters Patent, No. 972,722, above referred to, and comprises an angle lever 8, pivotally mounted on a screw 9 on the slide 6. One arm of the lever 8, shown by broken lines, is pivotally connected to one end of a wire 10, which is connected with the weft replenishing mechanism.

In case there is not a sufficient amount of filling 7' on the bobbin 7 to hold the engaging teeth on the end of the lever 8, the end of said lever will move outwardly, as shown in Fig. 2, and through the wire 10 put into operation the weft replenishing mechanism, to transfer a new bobbin in the usual way.

The reciprocating feeler member or slide 6, carrying the pivotally mounted angle lever 8, is withdrawn from the shuttle at the time of replenishment, through the engagement of an arm, extending downwardly from the rocking arm of the transferrer mechanism,

with a projection on the reciprocating member or slide 6, not shown in the drawing.

11 is the picker stick, which has the picker 12 on its end to engage with the end of the shuttle 3, in the usual way.

All of the above mentioned parts may be of the usual and well known construction.

I will now describe my improvements, which consists in mechanism to prevent the filling feeler mechanism from indicating the substantial exhaustion of filling 7' on the bobbin 7, in case the shuttle is not properly boxed, and is not placed in the right position relative to the magazine for a new bobbin to be transferred.

At the end of the lay and in this instance on the front side thereof, is secured a stand 13, which has a stud 14 thereon, on which is pivotally mounted the hub 15' of a horizontally extending lever or arm 15. The arm or lever 15 extends rearwardly toward the lay, and in the path of and adapted to be engaged by the picker stick 11 on its outward movement.

A helically coiled torsion spring 16 encircles the stud 14, and has one end connected to the hub 15' of the arm 15, and its other end connected to a collar 17, secured on a stud 14 by a screw 17'. The torsion spring 16 acts to move inwardly the arm 15 to cause it to bear against a pin 18 on the stand 13, see Fig. 1.

The arm 15 has a pin or stud 19 thereon, which has pivotally connected therewith one end of a connector wire 20. The other end of said wire 20 is pivotally connected to one end of an arm or lever 21, see Fig. 3, which has its hub 21' pivotally mounted on a stud 22 at the front of the lay. Extending upwardly from the hub 21' is a second arm of the lever 21, which is provided with the inwardly extending engaging end 21'', see Figs. 2 and 3, which is adapted to engage the feeler slide or member 6, and the angle lever 8 thereon.

From the above description in connection with the drawings the operation of my improvements will be readily understood by those skilled in the art, and briefly is as follows:

On the forward movement of the lay 1, the feeler slide or member 6 is adapted to engage at its inner end with the filling 7' on the bobbin 7, and moves back with the bobbin a certain distance, toward the front of the loom, as the lay beats up.

If there is not a sufficient amount of filling 7' on the bobbin 7, to hold the engaging end on the angle lever 8, said lever will move outwardly, as shown in Fig. 2, and through intermediate connections, cause the release of a bobbin from the magazine, preparatory to being transferred into the active shuttle, in the usual way.

If the shuttle 3 has not been properly

boxed, and moved to its extreme outward position, as shown in Fig. 1, the picker stick 11, which through the picker 12 engages the end of the shuttle, will remain in the position shown in Fig. 1, and leave the lever 15 in its inward position, shown in said figure. Through the connection 20 to the upright lever 21, the engaging end 21'' of said lever 21, will engage the feeler slide or member 6, and the angle lever 8, and prevent said lever 8 from being moved outwardly, and leave the weft replenishing mechanism inactive.

If the shuttle has been properly boxed, and in its extreme outward position, as shown in Fig. 2, the picker stick 11 will engage the lever 15, and move the lever outwardly, to the position shown in Fig. 2, and through the connection 20 to the lever 21, will move the engaging end 21'' of said lever away from the feeler slide or member 6, and the angle lever 8 thereon, as shown in Figs. 2 and 3, to allow said lever 8 to move to detect the substantial exhaustion of filling in the active shuttle, in the usual way.

The advantages of my improvements will be readily appreciated by those skilled in the art; they are of very simple construction, and can be readily applied to looms having filling detecting mechanism, of the class referred to.

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

My improvements may be combined with other well known forms of filling detectors used in weft replenishing looms.

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

1. In a weft replenishing loom, the combination with a filling detector or feeler, to detect the substantial exhaustion of filling in the active shuttle, and put into operation the weft replenishing mechanism, of mechanism to cooperate with said filling detector or feeler, and prevent the operation thereof when the filling is substantially exhausted, in case the shuttle is not properly boxed.

2. In a weft replenishing loom, the combination with a filling detector or feeler, to detect the substantial exhaustion of filling in the active shuttle, and put into operation the weft replenishing mechanism, of mechanism the operation of which is controlled by the shuttle, to cooperate with said filling detector or feeler, and prevent the operation thereof when the filling is substantially exhausted, in case the shuttle is not properly boxed.

3. In a weft replenishing loom, the combination with a filling detector or feeler, to detect the substantial exhaustion of filling in the active shuttle, and having two members, one movable relative to the other, when the filling is substantially exhausted in the ac-

5 tive shuttle, of mechanism to coöperate with said movable member and prevent the movement thereof when the filling is substantially exhausted, in case the shuttle is not properly boxed.

10 4. In a weft replenishing loom, the combination with a filling detector or feeler, to detect the practical exhaustion of filling in the active shuttle, and having two members, one movable relative to the other, when the filling is substantially exhausted in the ac-

tive shuttle, of mechanism the operation of which is controlled by the shuttle, to coöperate with said movable member, and prevent the movement thereof when the filling 15 is substantially exhausted, in case the shuttle is not properly boxed.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."