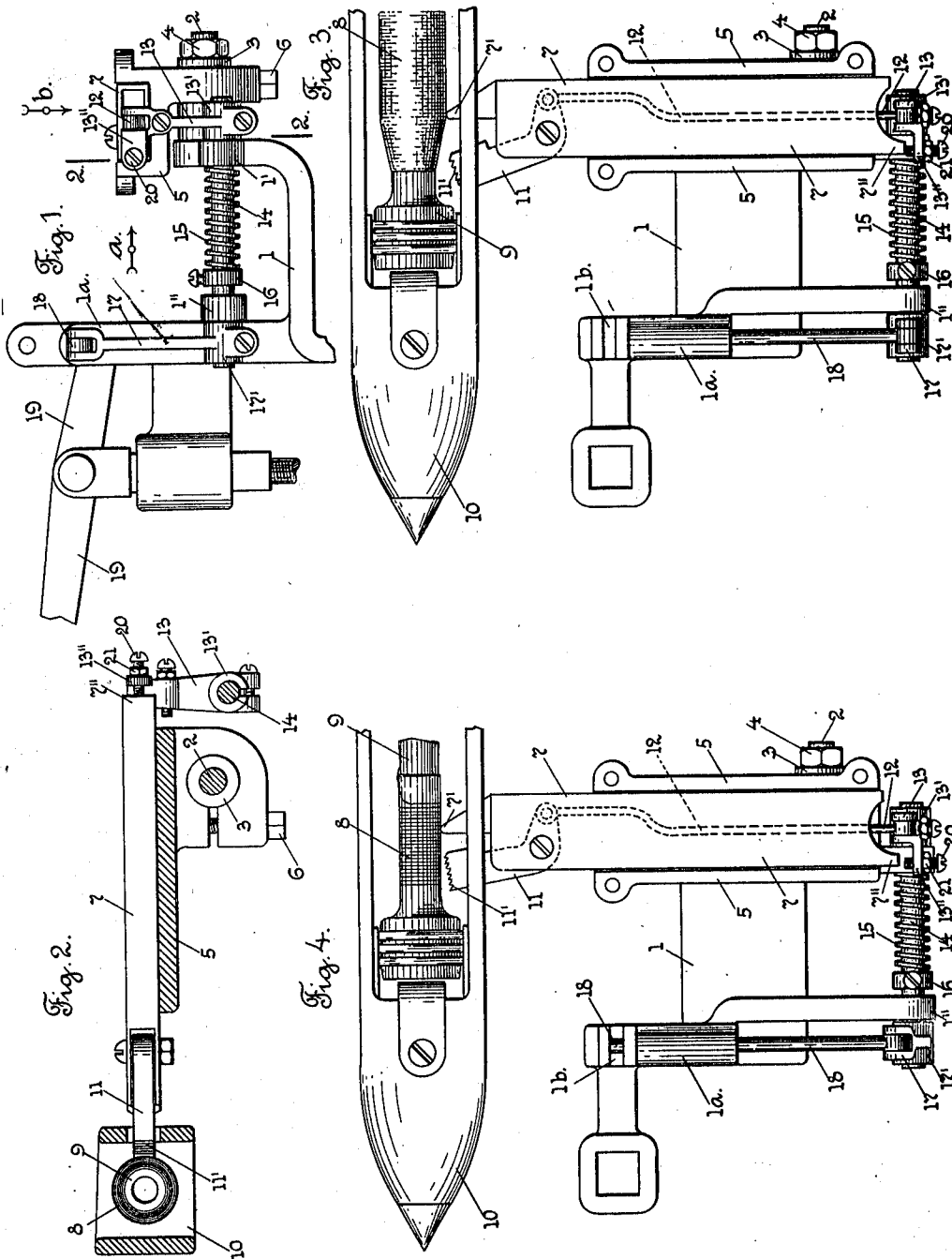


B. F. McGUINNESS.
 MECHANICAL FILLING DETECTOR FOR WEFT REPLENISHING LOOMS.
 APPLICATION FILED SEPT. 29, 1910.

988,728.

Patented Apr. 4, 1911,



Witnesses

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UNITED STATES PATENT OFFICE.

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MECHANICAL FILLING-DETECTOR FOR WEFT-REPLENISHING LOOMS.

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Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed September 29, 1910. Serial No. 584,470.

To all whom it may concern:

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

10 My invention relates to a mechanical filling detector or feeler mechanism for weft replenishing looms of the class shown and described in U. S. Letters Patent No. 972,722, dated Oct. 11, 1910, in which a filling detector or feeler feels through an opening in the front wall of the shuttle, to engage with the filling on the bobbin in the active shuttle, and on the substantial or practical exhaustion of the filling, acts to operate mechanism to cause the weft replenishing mechanism to supply a fresh bobbin, in the usual and well known way.

15 The filling detector or feeler comprises a feeler slide or member, which, on the forward movement of the lay, is yieldingly held against the filling on the bobbin, and moves therewith a certain distance toward the front of the loom as the lay beats up, to cause the pivot point of an operating lever of the weft replenishing mechanism to be withdrawn or moved backward. A second member consists of an angle lever pivotally mounted on the first mentioned member, and adapted to engage with the filling on the bobbin, until the substantial or practical exhaustion of the filling on the bobbin is reached; said two members move in unison. Upon the substantial or practical exhaustion of filling on the bobbin, there will not be a sufficient amount of filling on the bobbin to hold the engaging end of the second member or angle lever, and said member will rock or move on its pivotal support, and a connection to a second lever will cause said angle lever to remain in its inoperative position, and cause the pivot point to remain in its position underneath the operating lever of the weft replenishing mechanism, which causes a bobbin to drop from its compartment to the discharging end of the magazine, all as fully described in said Letters Patent No. 972,722, above referred to.

It has been found in practice that when

a bobbin is improperly wound, or the portion of the wound filling near the butt or head of the bobbin is too much beveled or inclined, the engaging end of the angle lever on the feeler slide may not reach or engage the filling on the bobbin, and consequently may not be held in its inoperative position, thus causing the replenishing mechanism to be put into operation, and a new bobbin to be transferred from the magazine into the active shuttle, when the filling on the bobbin is not substantially exhausted, consequently leaving too much waste filling on the bobbin.

The object of my invention is to improve upon the construction of the filling detector or feeler mechanism above referred to, and more particularly to combine with said mechanism supplemental mechanism, or means to prevent the feeler from indicating for a transfer of a bobbin, as long as there is a certain amount of filling on the bobbin.

My invention consists in certain novel features of construction of my improvements combined with the filling detector mechanism, as will be hereinafter fully described.

I have only shown in the drawing a mechanical filling detector of the type shown and described in said Letters Patent No. 972,722, above referred to, with my improvements combined therewith, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawing:—Figure 1 is a front view of a mechanical feeler with my improvements combined therewith. Fig. 2 is a section, on line 2, 2, Fig. 1, looking in the direction of arrow *a*, same figure. Fig. 3 is a plan view of the feeler shown in Fig. 1, looking in the direction of arrow *b*, same figure; a portion of the shuttle with the bobbin therein is shown in this figure, and Fig. 4 corresponds to Fig. 3, but shows some of the parts shown in Fig. 3, in a different position, and the bobbin substantially denuded of filling.

In the accompanying drawing, 1 is a stand secured to the loom side, not shown. On the stand 1 is carried a stud 2 having a bushing 3, secured thereon by a nut 4, to adjustably secure the feeler bed 5, which is fastened on the bushing 3 by a screw bolt

6, see Fig. 2. The guide or feeler bed 5 is preferably grooved on its upper portion to loosely receive the feeler slide 7, which is held thereon by a cap, not shown, secured 5 on the bed 5.

The feeler slide 7, which is yieldingly forced rearwardly by the action of a spring, not shown, has the engaging end 7' of wedge shape, to engage with the filling 8 on the 10 bobbin 9 in the active shuttle 10. The feeler slide 7 is preferably made of sheet metal, and is hollow throughout its central portion, and has located in its hollow part the angle lever 11, which is adapted to engage with its 15 serrated or toothed end the filling 8 on the bobbin 9. The other arm of the angle lever 11 is pivotally connected to one end of a rod or wire 12; the other end of said rod or wire 12 is pivotally connected to the upper end of 20 an upright lever 13, which has its hub 13' fast on a shaft 14, see Fig. 2, which shaft is loosely mounted in bearings 1', and 1'', on the stand 1. A helically coiled torsion spring 15 encircles the shaft 14, and has one 25 end connected to the bearing 1', and its other end to a collar 16 secured on the shaft 14. The torsion spring 15 acts to cause the rotation of the shaft 14, and the movement of the lever 13 to operate the angle lever 11, 30 when the slide 7 is in engagement with the bobbin, and is moved backward toward the front of the loom. In case there is not a sufficient amount of filling on the bobbin to hold the engaging end 11' of the angle lever 11, said lever 11 will move away from the 35 engaging end 7' of the slide 7, and through the rod or wire 12 will leave the upright lever 13 at rest. On the opposite end of the shaft 14 is secured the hub 17' of an upright 40 lever 17, see Fig. 1. The upper end of the lever 17 is pivotally connected with the horizontally extending rod 18, which has its inner end loosely guided in a boss 1^a on the stand 1, see Fig. 4. The forward end of the 45 rod 18 extends into an opening or slotted portion 1^b, and is adapted to form the pivot point for the end of the operating lever 19, see Fig. 1, of the selecting mechanism of the magazine.

50 All of the above mentioned parts, except the construction of the feeler slide 7, and the upright lever 13, may be of the construction shown and described in said Letters Patent No. 972,722 above referred to.

55 I will now describe my improvements.

The upright lever 13 has in this instance on its upper end, on one side thereof, a lug or ear 13'', which is provided with an adjusting screw 20 secured therein by a nut 21. 60 The adjusting screw 20 is adapted to engage with its inner end with an extension 7'' on the feeler slide 7.

As long as there is a certain amount of filling 8 on the bobbin 9, as shown in Fig. 3, 65 and the engaging end 11' of the lever 11 has

70 moved away from the engaging end 7' of the feeler 7, in case the bobbin has not been properly wound, or the bevel end of the bobbin does not properly hold the engaging end 11' of the lever 11, on the further outward movement of the slide 7, the extension 7'' on the slide 7 will engage the screw 20 and act to move the lever 13 to rock the shaft 14, and through the upright lever 17 withdraw the 75 rod 18 from underneath the operating lever 19, to prevent said lever from operating the weft replenishing mechanism. On the practical or substantial exhaustion of the filling 8 on the bobbin 9, as shown in Fig. 4, the engaging end 11' will also move, but the 80 diminished amount of filling on the bobbin will not move the filling slide 7 far enough to cause the extension 7'' thereon to engage the adjusting screw 20, see Fig. 4, thus leaving the lever 13 inoperative, and the rod 18 85 underneath the operating lever 19, to serve as a pivot point to cause the lever 19 to be operated and the weft replenishing mechanism to supply a fresh bobbin in the usual way, and as fully described in said Letters 90 Patent No. 972,722.

The advantages of my improvements will be readily appreciated by those skilled in the art. By means of my improvements too 95 much waste of filling on the bobbin is prevented, and my improvements may be readily combined with the weft replenishing mechanism of the type shown and described in said Letters Patent No. 972,722, referred to. 100

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:— 105

1. In a weft replenishing loom, a filling detector or feeler, comprising two members adapted to move longitudinally, and one member a slide, and the other member pivotally mounted on the slide and adapted to 110 have a movement in the direction of the length of the bobbin, and connections from said pivoted member to an upright lever, and said upright lever, and an adjustable 115 device, intermediate said upright lever and the slide member of the filling detector, to cause the movement of said upright lever and prevent the filling detector or feeler from indicating the transfer of a bobbin 120 until the substantial or practical exhaustion of filling on the bobbin.

2. In a weft replenishing loom, a filling detector or feeler, comprising two members adapted to move longitudinally, and one 125 member a slide, and the other member pivotally mounted on the slide and adapted to have a movement in the direction of the length of the bobbin, and connections from said pivoted member to an upright lever, 130

and said upright lever, and an adjusting screw carried on said lever and adapted to engage the outer end of the slide member of the filling detector mechanism, to cause the movement of said upright lever and prevent the filling detector or feeler from indicating the transfer of a bobbin until the sub-

stantial or practical exhaustion of filling on the bobbin.

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Witnesses:

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