H. L. FREEMAN.

THIN PLACE DETECTING MEANS FOR LOOMS.

APPLICATION FILED MAR. 10, 1909.

935,099. Patented Sept. 28, 1909.

Fig: 1.

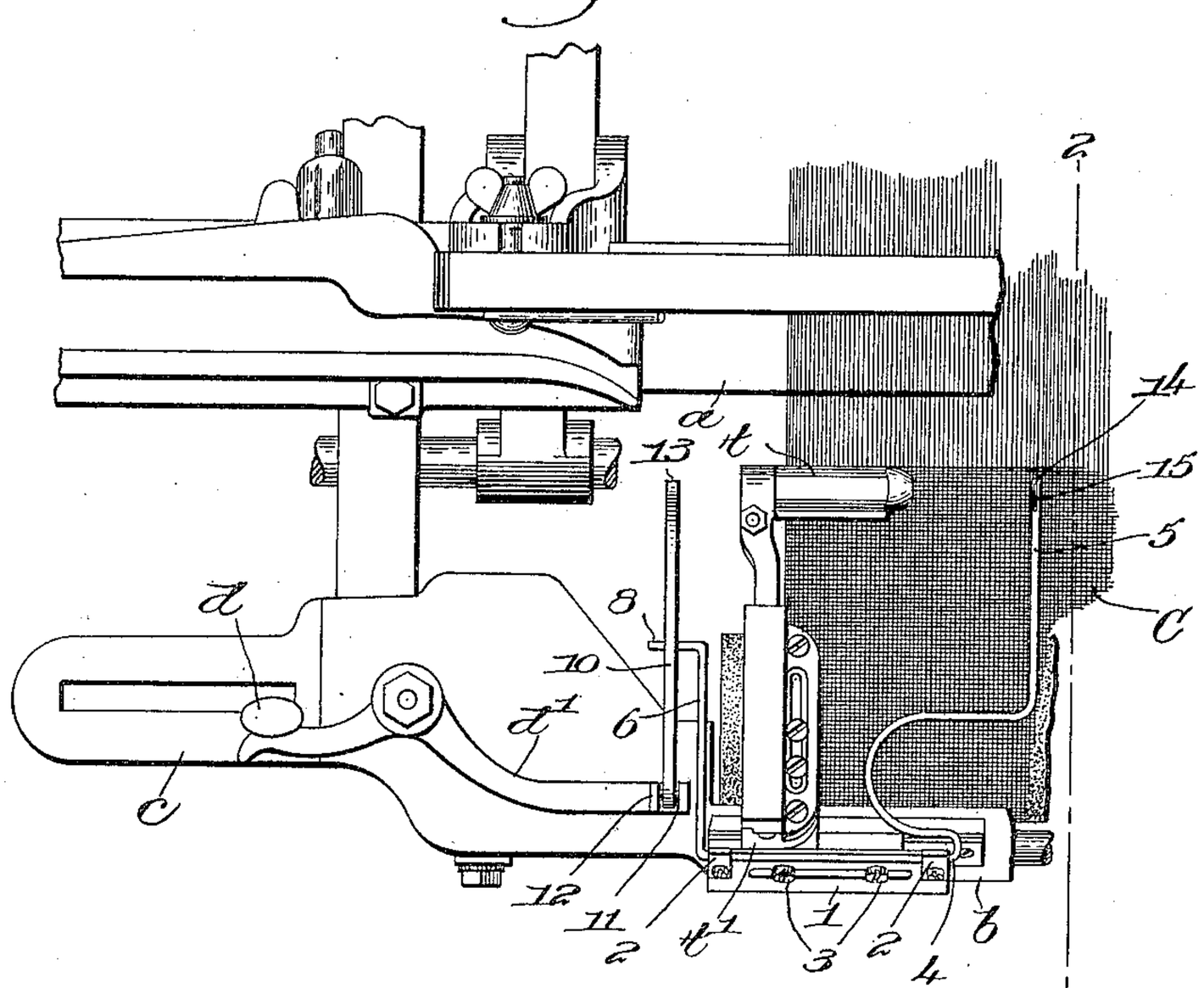
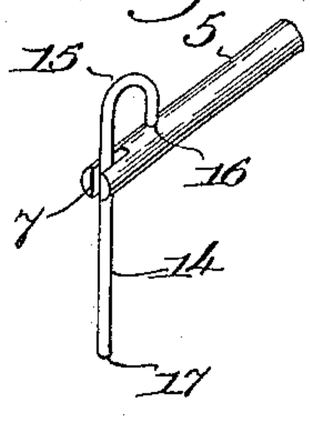


Fig: 2.

Fig: 3.



Witnesses
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UNITED STATES PATENT OFFICE.

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THIN-PLACE-DETECTING MEANS FOR LOOMS.

935,099. Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed March 10, 1909. Serial No. 482,495.

To all whom it may concern:

Be it known that I, HORACE L. FREEMAN, a citizen of the United States, and resident of West Durham, county of Durham, State of North Carolina, have invented an Improvement in Thin-Place-Detecting Means for 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 mechanism for detecting the occurrence of a streak or thin place in the cloth being woven on a loom, and for effecting stoppage of the loom automatically upon such detection.

One of the objects of my invention is the production of a novel detecting member and its mode of support, and another object of my invention is the production of very simple and direct-acting detecting mechanism, so constructed and arranged that loom stoppage is positively and surely effected by or through the lay.

These and other novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a top plan view of a portion of a loom with thin place detecting mechanism embodying one practical form of my invention applied thereto; Fig. 2 is a transverse section, enlarged, on the line 2—2, Fig. 1, looking toward the left; Fig. 3 is a perspective detail, enlarged, of the detecting finger and its supporting means.

Referring to Figs. 1 and 2, the lay *a* and breast-beam *b;* the notched holding-plate *c* for the shipper *d*, and the knock-off lever *d'*, Fig. 1; the temple *t*, and its stand *t'* mounted on the breast-beam *b*, are and may be all of usual or well known construction.

In the illustrated form of my invention a longitudinally slotted holder 1, having bearings 2, is adjustably secured by bolts 3 to the foot of the temple stand *t'*, and in the bearings is supported a horizontal rocking rod 4. Herein this rod is shown as provided at its inner and outer ends with arms 5, 6, clearly shown in Fig. 1, rearwardly extended toward the lay, the arm 5 being long enough to overhang the cloth C near its fell, the free end of the arm having a vertical slot 7 made therein, see Fig. 3. This arm lies inside the temple, as shown in Fig. 1, while the outer arm 6 lies outside of the temple and has its free end bent outward to form a lateral extension 8, which enters freely a longitudinal slot 9 in a dog 10 pivoted at 11 between ears 12 on the knock-off lever, the rear end of the dog being bent down at 13 and under normal operation of the loom just clearing the lay *a* when the latter beats up. When the rod 4 is rocked to depress the extension 8 the dog 10 is lowered sufficiently to bring its end 13 into the path of the lay, so that on the forward beat thereof said dog is moved forward and turns the knock-off lever to release the shipper *d*, and thereby effect loom stoppage.

The thin place detector or detecting finger is formed of a piece of resilient but sufficiently stout wire 14 bent over at its upper end, as at 15, in the form of an inverted U, and its upper extremity is fixedly secured to the arm 5 at 16, forward of the slot 7. The downturned or main part 14 of the finger is extended through the slot 7 and the lower extremity or tip 17 of the finger is adapted to rest upon the cloth close to the fell. By this construction the sides of the slot firmly support the finger laterally and maintain it at all times vertical and in proper relation to the cloth, while the slot permits slight yielding movement of the finger fore and aft in the direction of the travel of the warp.

While the cloth passing beneath the tip of the finger is perfect the finger will be upheld and the dog 10 will be maintained lifted above the path of the lay. If the filling fails the detecting finger at once sinks between the warp threads and the rod 4 is permitted to rock and depress the outer arm 6, thereby operatively positioning the dog 10 in the path of the lay on its next forward beat, to knock off the shipper and stop the loom. The sliding-connection between the dog and the arm 6 permits the forward movement of the dog by or through engagement with the lay.

By means of the bend 15 in the detector finger the latter can be readily and accurately adjusted as near to the fell of the cloth as is necessary or desirable, in order that the detection of a thin place may be prompt and effective. The detecting mechanism can be readily adjusted upon the temple stand to accommodate different widths of cloth, and by lifting and throwing for-

ward the dog the detecting mechanism can be swung forward out of the way whenever desired.

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

1. In a thin place detector, a pivoted, rearwardly extended arm vertically slotted at its free end, and a detecting finger fixed at its upper end on said arm and bent downward to rest upon the cloth adjacent the fell, the downwardly bent part of the finger entering the slot in the arm and being held thereby from lateral movement, while free to move slightly in the direction of warp travel.

2. In a thin place detector, a resilient detecting finger bent at its upper end to form an inverted U, having upright legs of unequal length, a support on which the shorter leg of the bend is fixedly mounted, and means on the support to engage opposite sides of the longer leg of the bend below the bend and sustain it laterally.

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

HORACE L. FREEMAN.

Witnesses:

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C. T. Miles.