

**916,955.**

Fig. 2.

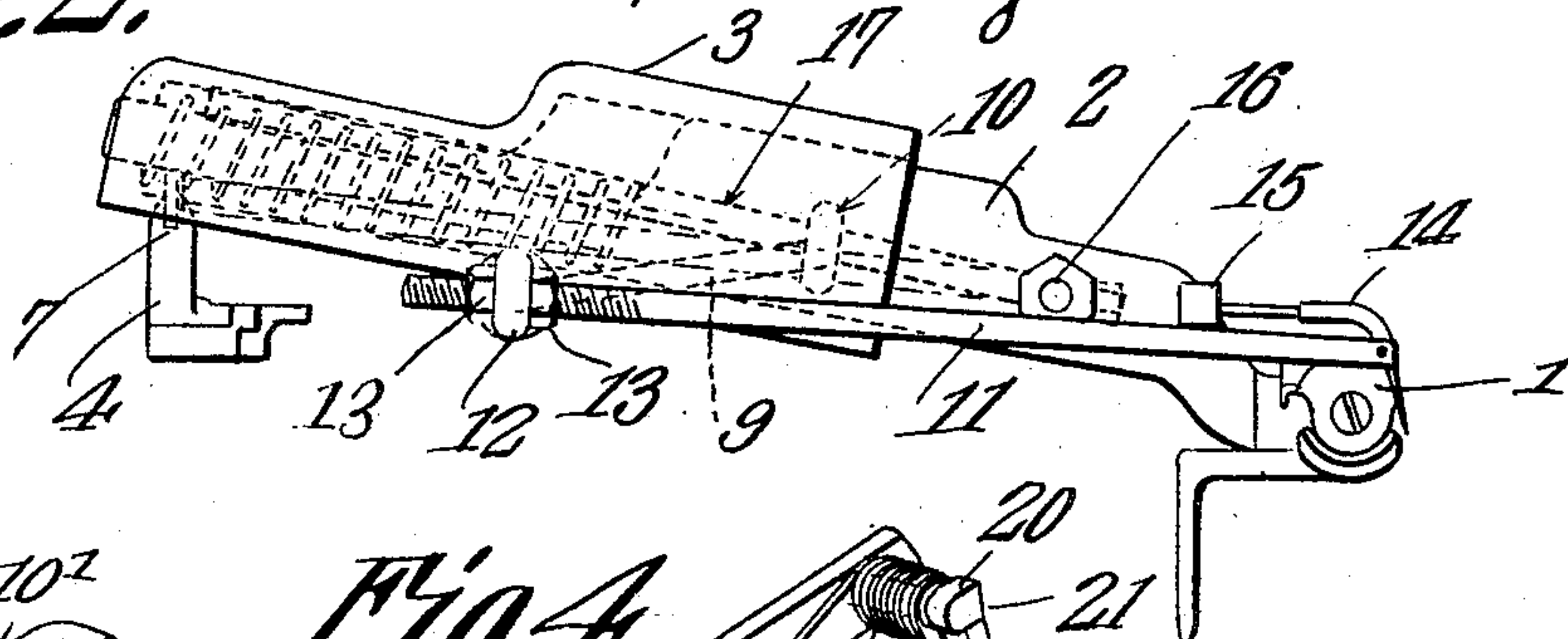


Fig. 4.

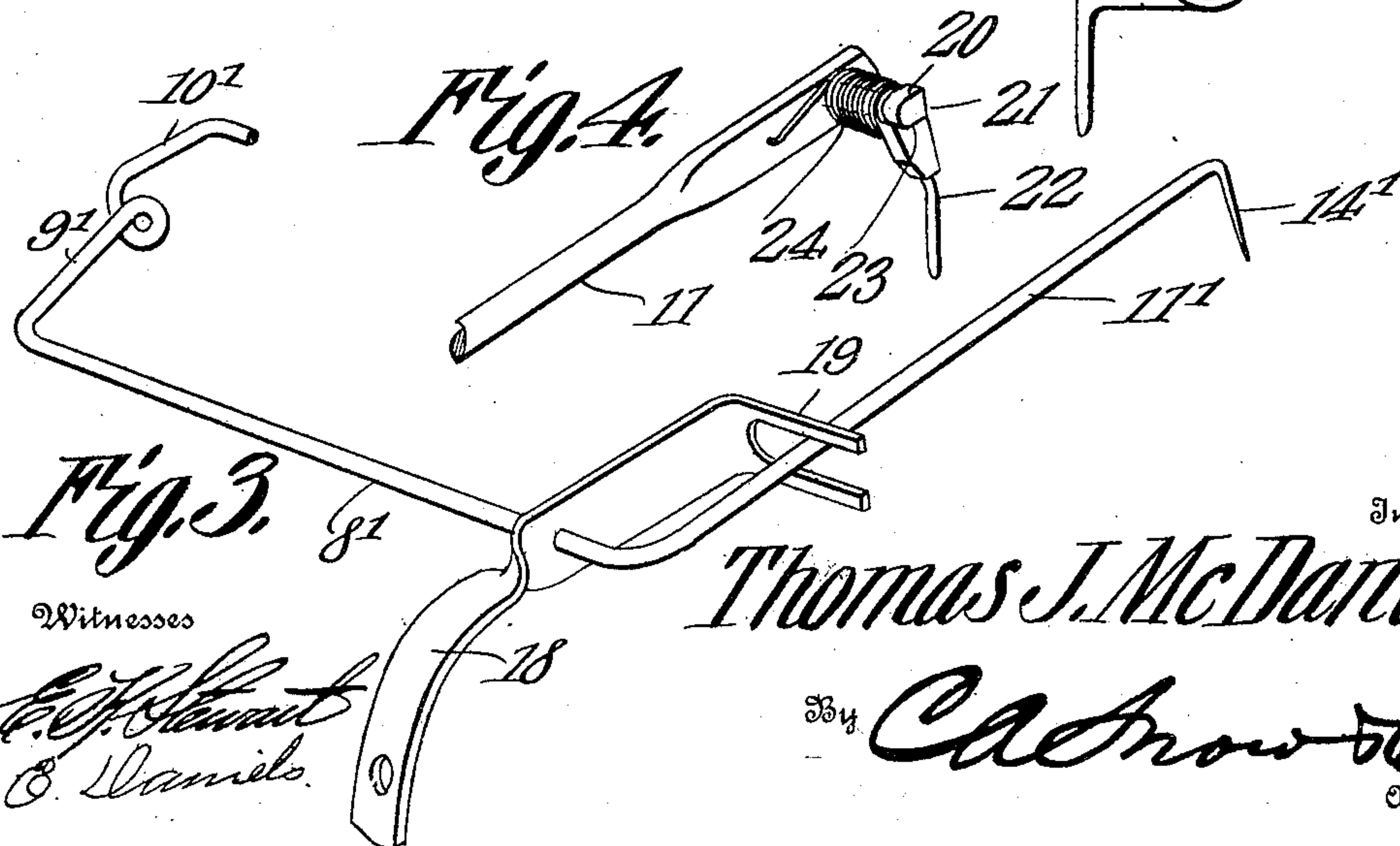


Fig. 3.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## THIN-PLACE DETECTOR.

No. 916,955.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed November 24, 1908. Serial No. 464,267.

*To all whom it may concern:*

Be it known that I, THOMAS J. McDANIEL, a citizen of the United States, residing at Duke, in the county of Harnett and State of North Carolina, have invented a new and useful Thin-Place Detector, of which the following is a specification.

This invention has relation to thin place detectors, and it consists in the novel construction and arrangement of its parts, as hereinafter shown and described.

The object of the invention is to provide a simple and effective thin place detector, which is adapted to be mounted upon the temple stand of a loom, and which is provided with a finger arranged to lie upon the cloth in the vicinity of the pick, and which is designed to detect thin places in the filling. An arm is pivotally mounted upon the temple of the loom and is operatively connected with the part attached to the temple stand and is adapted, when the finger discovers a thin place, to swing down and engage a knock-off lever, whereby the shipper is permitted to move and bring the loom to a stand-still. In devices of the character stated, heretofore used, they have been usually mounted upon the breast beam or other parts of the frame of the loom, but the present invention differs over its predecessors in that it is mounted entirely upon the temple and temple stand of the loom.

Means is provided for limiting the swinging movement of the finger of the thin place detector so that it may not pass to too great an extent through the cloth, and, at the same time, will have sufficient movement to carry the arm against the knock-off lever.

In the accompanying drawings:—Figure 1 is a plan view of a portion of a loom, showing one form of the thin place detector attached thereto. Fig. 2 is a side elevation of the loom temple, showing the form of thin place detector attached thereto, as illustrated in Fig. 1. Fig. 3 is a perspective view of a modified form of thin place detector, showing the means for limiting the movement thereof. Fig. 4 is a perspective view of a modified form of spring-actuated finger with which the thin place detector may be equipped.

Figure 1 of the drawings illustrates a portion of a loom, which need not be described in detail, but in which is a temple 1, mounted by means of a bracket 2, in the

temple stand 3. The knock-off lever 4 is pivoted upon the breast beam 5 of the loom, and, at its working end, lies adjacent the shipper lever 6.

The parts above described are of the familiar type usually found in loom structures.

The lug 7 is mounted upon the collar end of the knock-off lever 4, and is disposed toward the temple stand 3.

In the form of thin place detector, as shown in Figs. 1 and 2 of the drawings, the structure consists of the shaft portion 8, which is journaled for rotation in the under part of the temple stand 3. The said shaft portion 8 is provided with a crank portion 9, which lies substantially parallel with the longer dimension of the temple stand 3, and is provided at its end with a laterally disposed eye 10. The finger portion 11 passes through the lug 12, which is mounted at the end of the shaft portion 8, and is held in an adjusted position with relation to the said lug by the nuts 13, which are screw threaded upon the said finger portion 11, and are adapted to bear against opposite sides of the said lug 12. The index 14 is pivotally mounted at the end of the finger portion 11, and the said index is provided with a weight 15, which is adapted to normally lie upon the upper side of the finger portion 11, and hold the said index in proper position with relation to the finger portion. The pin 16 is pivotally attached to the bracket 2 of the temple 1 and projects laterally from the same. The arm 17 is carried by the said pin 16 and passes through the eye 10 upon the crank portion 9 of the shaft portion 8 of the thin place detector. The forward end of the arm 17 normally lies above, but behind the rear surface of the lug 7 carried by the knock-off lever 4. When, however, the index 14 discovers a thin place in the cloth, it passes, by gravity, down through the fell, and the finger portion 11 swings down upon the shaft 8 as an axis. The crank portion 9 of the said shaft moves correspondingly, and the eye 10 is lowered, whereby the forward end of the arm 17 is moved down and behind the rear surface of the lug 7, mounted upon the knock-off lever 4. Consequently, as the temple 1 moves forwardly in response to a blow delivered from the bunter of the lay, the bracket 2 and the arm 17 are moved longitudinally, and the said arm is forced into contact with the lug 7



carried by the knock-off lever 4, which is swung upon its fulcrum, whereby its working end throws the shipper lever 6 laterally, which is then free to move in the usual manner, to throw the loom out of gear. Thus, when the index 14 discovers a thin place in the cloth, the weaving operation is instantaneously stopped and the parts of the loom are brought to a state of rest.

10 In the form of the invention as illustrated in Fig. 3 of the drawings, the thin place detector is formed from a continuous rod having the shaft portion 8', the crank portion 9', which terminate in the loop portion 10'.  
15 At its opposite end the said thin place detector is provided with the finger portion 11', which terminates in the index portion 14'. A movement-limiting lug 18 may be used in connection with any form of the in-  
20 vention, and the said lug is adapted to be attached at one end to the breast beam 5 of the loom and the shaft portion of the thin place detector passes transversely through the intermediate portion of the said lug. The rear  
25 end of the said lug is disposed laterally and formed into the spaced projections 19, between which the finger portion of the thin place detector is located. The space between the projections 19 is sufficient to permit the  
30 finger portion of the said thin place detector to have ample vertical movement, but is not sufficient to allow excessive movement on the part of the finger portion of the thin place detector. The loop 10' of the form of the in-  
35 vention shown in Fig. 3, is adapted to receive the rod 17 in such manner that the said rod may move longitudinally through the said loop.

40 In the form of the invention as illustrated in Fig. 4 of the drawing, the finger portion 11 of the thin place detector is provided, at its rear end, with a laterally disposed pin 20, having an enlarged head 21. The index 22 is pivoted upon the pin 20, and is provided,  
45 at its upper end portion, with a shoulder 23, which is adapted to engage the side of the head 21 of the pin 20. The coil spring 24 is attached, at one end, to the portion 11 of the thin place detector, and at its other end to  
50 the index 22, and surrounds the intermediate portion of the pin 20. The said spring 24 is under tension with a tendency to hold the

shoulder 23 of the index 22 against the side of the head 21 of the pin 20; but the said index 22 may swing forwardly at its lower end, against the tension of the spring 24, thus providing means whereby the said index may retreat from the fell without injuring the filling when a thin place is discovered.

60 In all of the forms of the invention, while the filling at the fell sustains the weight of the detector, the thin place detector will retain the rod 17 out of engagement with the lug 7, but, upon the occurrence of a thin  
65 place in the cloth, the said rod 17 is permitted to fall, whereby the knock-off lever 4 is operated as described.

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

1. A thin place detector comprising a member pivotally mounted upon the temple stand and carrying an index, and a member pivotally connected with the temple and  
75 mounted for movement in unison therewith and slidably engaging the first said member.

2. A thin place detector comprising a member pivotally mounted upon the temple stand and carrying an index, an arm pivotally mounted and carried by the temple, and  
80 a rod carried by the arm and slidably engaging the member pivoted to the temple stand.

3. A thin place detector comprising a member pivotally mounted on the temple stand and carrying an index and having a finger portion which is disposed toward the fell, a lug attached to the breast beam and having at an intermediate point an opening through which the said member passes, and  
85 means provided at its rear end with laterally disposed spaced projections which receive between them the finger portion of the said member, and a member pivotally mounted upon the temple and slidably engaging the  
90 first named member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

THOMAS J. McDANIEL.

Witnesses:

C. J. SMITH,  
GEO. W. HART.