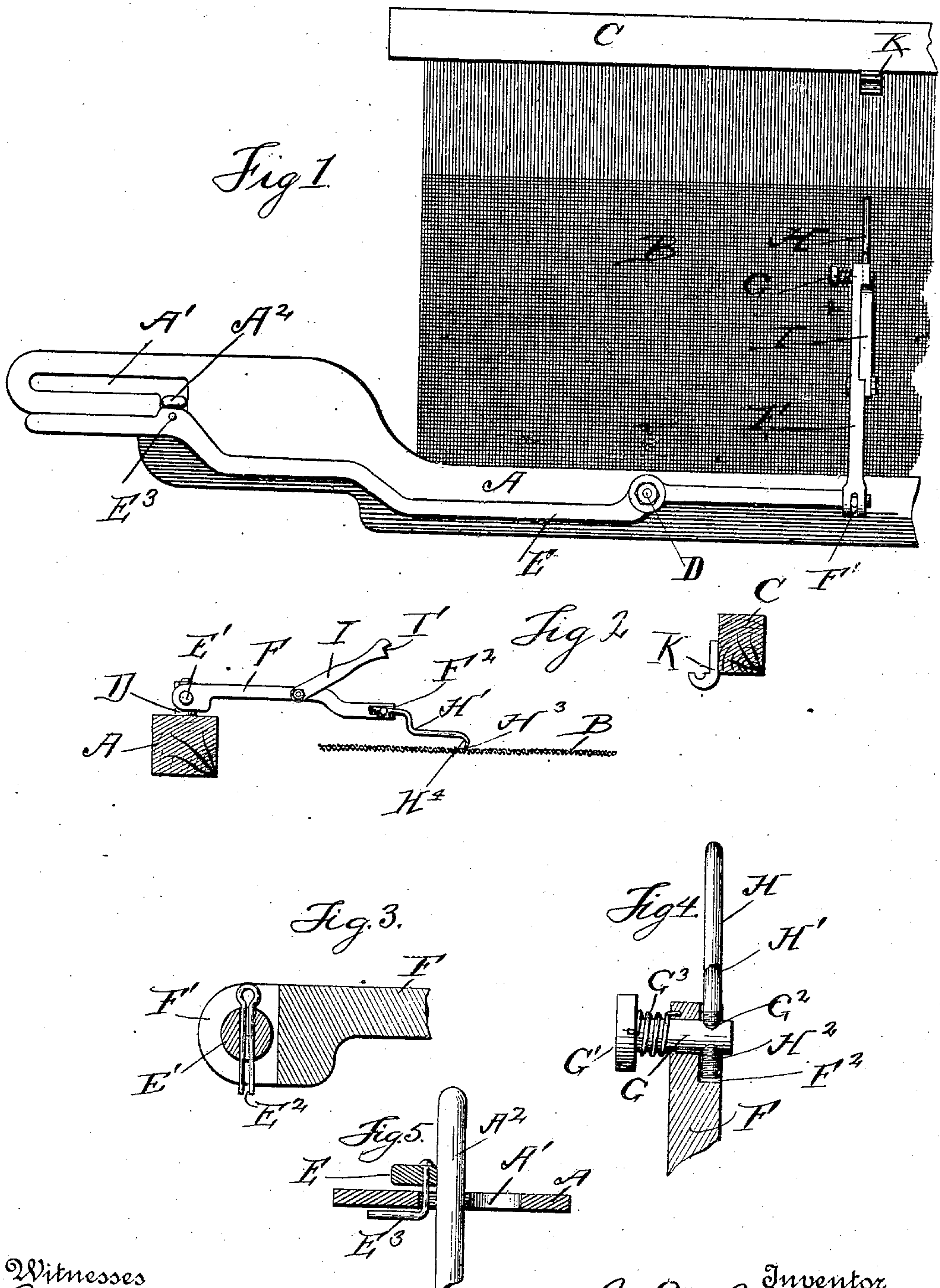


No. 855,341.

PATENTED MAY 28, 1907.

R. E. RHODEN.
THIN PLACE DETECTOR MECHANISM FOR LOOMS.
APPLICATION FILED JULY 13, 1904.



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ROBERT ELI RHODEN, OF GRANITEVILLE, SOUTH CAROLINA.

THIN-PLACE-DETECTOR MECHANISM FOR LOOMS.

No. 855,341.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed July 13, 1904. Serial No. 216,347.

To all whom it may concern:

Be it known that I, ROBERT ELI RHODEN, a citizen of the United States, residing at Graniteville, in the county of Aiken and State of South Carolina, have invented a new and useful Improvement in Thin-Place-Detector Mechanism for Looms, of which the following is a specification.

This invention relates generally to looms and more particularly to an attachment to be used in connection with the loom and by means of which the said loom can be stopped whenever a thin place occurs in the fabric owing to the improper action of some parts of the loom.

Another object of the invention is to provide a thin place detector of such construction that it can be applied to a loom without altering any of the parts of said loom and which will not be in the way of the operator.

Another object of the invention is to provide a thin place detector of such construction that the feeler or hook will be lifted out of the fabric in case the loom should continue to operate after the hook or feeler had dropped through a thin place, such lifting of the hook or feeler avoiding a rip or tear which would otherwise occur in the fabric.

With these various objects in view my invention consists essentially in providing a lever which is pivotally mounted upon the breast beam of the loom and is adapted to contact with the throw off or stop lever of said loom, the opposite end of the lever having an arm pivotally connected thereto, which arm carries a feeler or hook at its outer end, said feeler or hook having a spring connection with the end of the arm, said arm also having a finger intermediate its end, which finger is adapted to engage a bunter carried by the reed cap, said bunter engaging the finger only when the feeler or hook drops through a thin place in the fabric.

The invention consists also in certain details of construction hereinafter fully described and pointed out in the claims.

In the drawings forming a part of this specification:—Figure 1 is a top plan view of a portion of the breast beam of the loom and showing my invention attached thereto, the reed cap also being shown in top plan. Fig. 2 is a view showing my invention in side elevation, the breast beam, fabric and reed cap being shown in section. Fig. 3 is a detail sectional view of the inner end of the arm.

Fig. 4 is a detail sectional view of the outer end of the arm, the feeler being shown in top plan. Fig. 5 is a detail section on the line 5—5 of Fig. 1.

Referring to the drawings A indicates the breast beam having a slot A', at one end thereof, and in which works the stop or throw off lever A², said parts being of the usual construction.

B indicates the fabric in process of weaving and C the reed cap. A pivot bolt or pin D is rigidly fixed to the breast beam A, and pivoted upon said bolt or pin, is the lever E, the long arm of which is made to conform to the shape of the breast beam, said lever contacting with the throw off lever A² as most clearly shown in Fig. 1 and 5. An arm F is pivotally mounted upon the opposite end of the lever E which end is reduced and rounded as shown at E'. The pivotal end of the arm F is bifurcated as shown at F', and a cotter pin E² is passed through the reduced end E', of the lever within the bifurcation as most clearly shown in Figs. 1 and 3. A pin G, is passed transversely through the outer end of the arm F, said pin having a head G', and a threaded aperture G².

H indicates the hook or feeler preferably made of wire and bent as shown at H', and threaded at its rear end as indicated at H² and adapted to be screwed into the threaded aperture G² of the pin G. The outer or forward end of the hook or feeler is tapered as shown at H³, and is adapted to rest upon the fabric. The under edge of the front of the feeler is curved as shown at H⁴ adapted to engage the body of the cloth when the point has dropped into a thin place and force the point out of the thin place so as to prevent the point from tearing the cloth if the loom should continue to move. The forward end of the arm F, is cut away as shown at F² in order to permit a limited rocking movement of the inner end of the feeler and a spring G³ is coiled around the pin G, one end being fastened to the end of the arm and the other to the head of the pin as most clearly shown in Fig. 4. This makes a spring pivotal connection between the end of the arm and the feeler, the purpose being to normally hold the feeler into contact with the cloth under a slight pressure but at the same time permit it to move upwardly, and if the feeler should drop through a thin place in the fabric and the loom continue to run the feeler would be

thrown upwardly by the curved under edge and in that way a rip or tear in the fabric avoided and if this yielding connection between the end of the arm and feeler were not present, the said feeler would continue in its dropped position and thereby produce a rip or tear in the fabric. In order to automatically throw the loom out of operation the moment the feeler drops through a thin place in the fabric, I employ a finger I, which is attached to the arm F intermediate its ends and projecting forwardly and upwardly from the said arm as most clearly shown in Fig. 2, the forward end of said finger being cut away as shown at I² and adapted to engage the bunter K, fixed to the reed cap C and when the said bunter contacts with the finger the arm is pushed backwardly and this backward movement of the arm acts upon the lever E and said lever acting upon the throw off lever A², stops the loom. E³ indicates the angular pin attached to the lever E and adapted to hold it in its proper position with relation to the breast beam of the loom.

The operation is as follows:—The pointed end of the feeler H being held into contact with the cloth under a slight pressure by the spring G³ whereby, when a thin place in the cloth occurs the point is pressed through the cloth, whereupon the arm I drops into the path of the bunter K. In the forward movement of the lay, said bunter engages the arm I and pushes the short arm of the lever E outwardly. This movement carries the feeler outwardly and the curved under edge H⁴ of the feeler engages with the body of the cloth and is pressed upwardly, the spring G³ permitting the upward movement of the feeler independent of the arm F on which it is mounted.

It will thus be seen that I provide an exceedingly simple and efficient construction of thin place detector which can be attached to looms now in use without altering any part of the loom and which will successfully

perform all the purpose for which it is desired.

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

1. A thin place detector comprising a lever, an arm pivotally connected to one end of said lever, a feeler having a spring actuated pivotal connection with said arm, and a finger carried by the arm and adapted to engage a projection upon the reed cap.

2. A thin place detector comprising a lever pivoted to the breast beam, an arm pivoted to one end of said lever, a spring actuated pin carried at the end of said arm, the feeler adjustably connected to said pin and a finger carried by the arm and adapted to engage a bunter arranged upon the reed cap.

3. The combination with a lever, adapted to be pivoted to the breast beam of a loom, of an arm pivotally connected to one end of said lever, the outer end of said lever being recessed, a pin arranged transversely in said end, a spring surrounding said pin, one end fastened to the pin and the other to the arm, the feeler adjustably connected to said pin and a finger attached to said arm and adapted to engage a bunter arranged upon the reed cap of a loom.

4. In a thin place detector the combination with an arm, of a pin passed transversely through the end of said arm, a spring surrounding said pin, one end of which is attached to the pin and the other end to the arm, a feeler threaded into the said pin and a projecting finger carried by the arm.

5. In a thin place detector the combination with an arm, of a spring actuated pin carried by said arm and having a threaded bore, a feeler having a point at one end and threaded at the opposite end and screwed into the pin and a finger pivoted to said arm.

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