

(No Model.)

2 Sheets—Sheet 1.

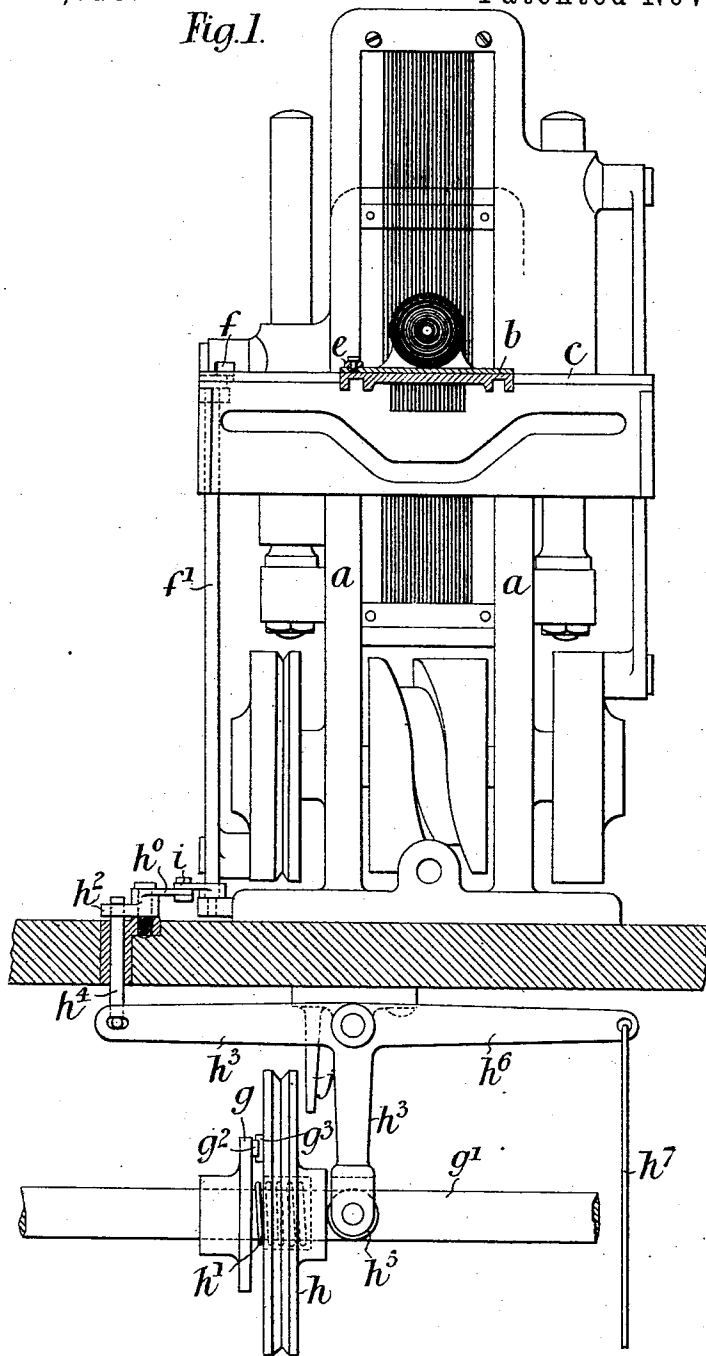
J. POYSER.

WEFT STOPPING MECHANISM FOR LOOMS.

No. 570,815.

Patented Nov. 3, 1896.

Fig. 1.



Witnesses.

E Dacre Mackie.
J. B. Cox.

Inventor.

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(No Model.)

2 Sheets—Sheet 2.

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No. 570,815.

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Fig. 2.

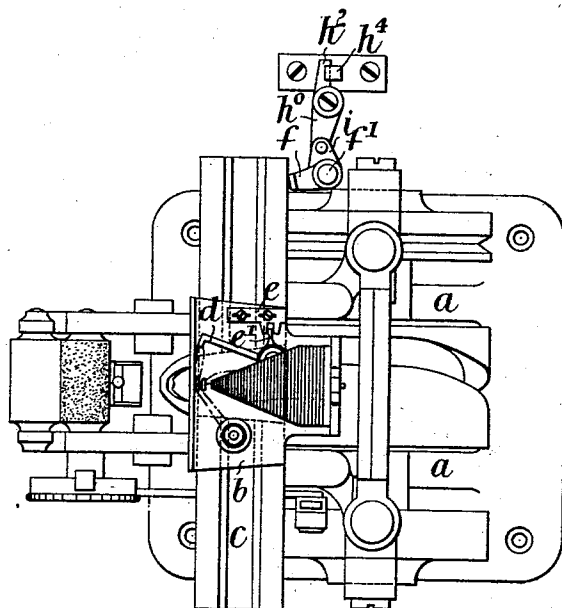


Fig. 3.

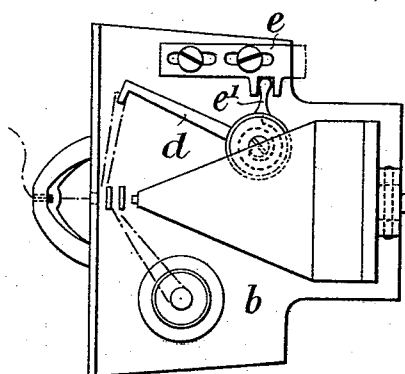
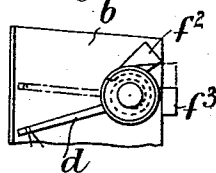


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN POYSER, OF MANSFIELD, ENGLAND.

WEFT-STOPPING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 570,815, dated November 3, 1896.

Application filed February 24, 1896. Serial No. 580,463. (No model.) Patented in England January 2, 1895, No. 144; in France July 25, 1895, No. 249,170; in Belgium July 25, 1895, No. 116,704; in Italy September 30, 1895, XXX, 39,439, and LXXVII, 227; in Spain October 12, 1895, No. 17,785; in Austria November 21, 1895, No. 45/4,406, and in India November 23, 1895, No. 261.

To all whom it may concern:

Be it known that I, JOHN POYSER, a subject of the Queen of Great Britain, residing at Mansfield, England, have invented new and useful Improvements in the Weft-Stopping Mechanism of Looms, (for which patents have been granted to me in Great Britain, No. 144, dated January 2, 1895, and in India, No. 261, dated November 23, 1895, and to myself jointly with James Haywood and Francis Edward Dyke Acland in France, No. 249,170, dated July 25, 1895; in Belgium, No. 116,704, dated July 25, 1895; in Italy, Vol. XXX, No. 39,439, and Vol. LXXVII, No. 227, dated September 30, 1895; in Spain, No. 17,785, dated October 12, 1895, and in Austria, No. 45/4,406, dated November 21, 1895,) of which the following is a specification.

This invention relates to the weft-stopping mechanism of looms, especially applicable to high-speed looms of the kind described in the specification of former Letters Patent No. 547,130, dated October 1, 1895.

In the accompanying drawings, Figures 1 and 2 are respectively a front sectional elevation and a plan of a high-speed loom provided with my improved weft-stopping mechanism. Fig. 3 is a plan of the shuttle of the loom detached and drawn to an enlarged scale, and Fig. 4 is a plan of a modification of part of the mechanism.

Similar reference-letters indicate corresponding parts throughout the drawings.

a is the frame of the loom; *b*, the shuttle thereof, sliding in the raceway *c*, and *d* the spring take-up lever on the shuttle.

According to my invention I provide a sliding bolt *e* upon the shuttle *b*, adapted, when the weft-thread breaks, to operate a lever *f* on a spindle *f'*, Figs. 1 and 2, in connection with mechanism for stopping the loom. The bolt *e* engages with the spring take-up lever *d* by means of a projection *e'* or otherwise, so that when the take-up lever is in its forward position, corresponding to the end of the shuttle's stroke, the bolt *e* is moved so as not to project beyond the side of the shuttle. When, however, the take-up lever is in its extreme backward position, the bolt projects be-

yond the shuttle. If therefore the weft-thread breaks, the take-up lever *d* is moved by its spring into the backward position and the bolt *e* consequently moved so as to project beyond the side of the shuttle, and as the latter arrives at the end of its stroke the projecting bolt comes in contact with and moves the lever *f*. The mechanism in connection with the said lever for stopping the loom comprises a disk *g* on the driving-shaft *g'* of the loom, provided with a projection *g²*, adapted to engage with a similar projection *g³* upon the driving-pulley *h*. The pulley *h* is normally held in engagement with the disk *g* against the pressure of a spring *h'* by one end of a pivoted catch *h²* through the medium of a bell-crank lever *h³* and hooked bolt *h⁴*, the said catch engaging beneath the hook of the said bolt *h⁴*. One arm of the lever *h³* is forked and carries friction-rollers *h⁵*, which press against the boss of the driving-pulley *h*. The catch *h²* is provided with an oppositely-extending arm *h⁶*, jointed to a lever *i* on the shaft *f'*.

By the described construction it will be seen that when the weft-thread breaks, and the bolt *e* consequently projects from the shuttle so as to move the lever *f* and turn the spindle *f'*, the crank *i* will be moved and operate the catch *h²* to release the bolt *h⁴*, and consequently allow the driving-pulley *h* to be moved out of engagement with the disk *g* by means of the spring *h'*.

j is a fixed brake-block with which the side of the pulley *h* comes into contact when moved by the spring *h'*, as described, to insure the instantaneous stopping of the loom.

The lever *h³* is provided with an additional arm *h⁶*, whereby it may be actuated so as to start the loom again by a suitable treadle (not shown) through the medium of a rod *h⁷*, attached to the said arm *h⁶*.

Instead of the sliding bolt *e* the take-up lever *d* may be arranged to directly operate the lever *f*. For this purpose the said take-up lever is provided with a projection *f²*, as shown in Fig. 4, which projection, when the take-up lever *d* is in its extreme backward position by reason of the breaking of the

weft-thread, projects beyond the side of the shuttle, as indicated by the dotted lines in the said figure. This extreme backward position is determined by a stop f^3 , with which
 5 the projection f^2 comes into contact.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

10 1. In combination in a loom, the driving-shaft, the pulley, the clutch mechanism connecting the same, the shuttle, the take-up lever carried thereby, and the projection rigidly attached to said lever and independent
 15 mechanism operated by said projection for releasing said clutch, substantially as described.

2. In combination, in a loom, the driving-shaft, the shiftable pulley, means for holding
 20 the same in engagement with said shaft, comprising the bell-crank lever h^3 , the bolt h^4 , the centrally-pivoted arm having one end engaging said bolt, the spindle f' , the arm i carried thereby having its end pivoted to the end
 25 of said centrally-pivoted arm and means for rocking said spindle to disengage said pulley and shaft, substantially as described.

3. In combination, in a loom, the driving-shaft, the pulley, the clutch mechanism, the
 30 shuttle, the pivoted take-up lever under

spring-tension carried thereby, the projection formed integral with said lever independent mechanism operated thereby for releasing
 said clutch mechanism and the stop carried
 by said shuttle adapted to limit the move- 35
 ment of said projection, substantially as described.

4. In combination in a loom, the shuttle, the take-up lever pivoted thereon, the sliding bolt also carried by the shuttle and in
 40 connection with the said lever, the lever f and shaft f' carrying the same, the lever i also carried by the shaft f' , the pivoted catch having the oppositely-arranged arm connected to the lever i , the bolt h^4 engaging the
 45 catch, the driving-shaft, the pulley, the means for holding the said pulley and shaft in engagement, the said pulley being adapted to disengage from the said shaft by the breaking of the weft-thread through the said sliding
 50 bolt operating the lever f , to rock the shaft f' and release bolt h^4 , through the arms i , h^0 , h^2 , and thereby disengaging the clutch mechanism between the pulley and driving-shaft, substantially as described.

JOHN POYSER.

Witnesses:

E. DAVIE MACKIE,
 T. B. COX.