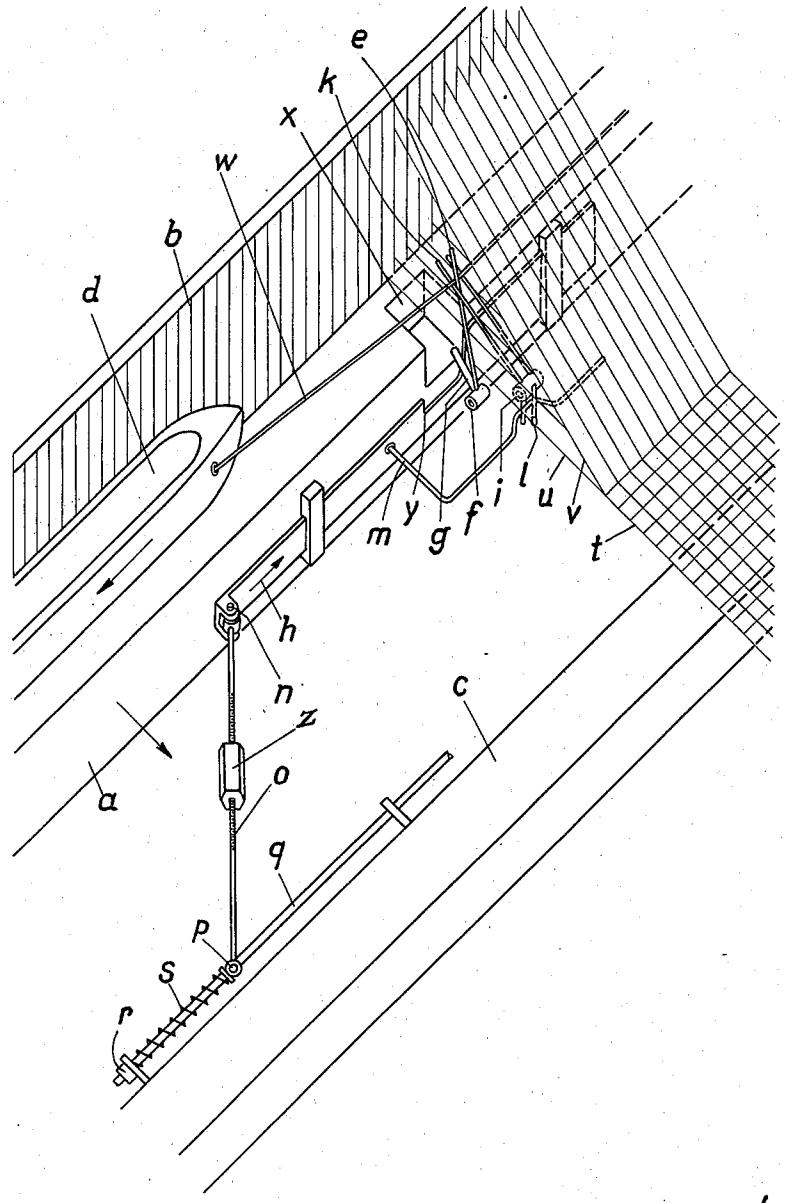
July 12, 1938. W. LOHSSE 2,123,472

INTERMEDIATE WEFT STOP MOTION FOR LOOMS WITH FEELER AND LIFTER

Filed July 9, 1935



Inventor:
W. Lohsse

By: Glascock Downing & Seebold
Attys.

Patented July 12, 1938 2,123,472

UNITED STATES PATENT OFFICE

2,123,472

INTERMEDIATE WEFT STOP MOTION FOR LOOMS WITH FEELER AND LIFTER

Wilhelm Lohsse, Gladbach-Rheydt, Germany

Application July 9, 1935, Serial No. 30,551
In Germany July 12, 1934

6 Claims. (Cl. 139—376)

Intermediate weft stop motions for looms with feeler and lifter, together with a control part swinging with the slay, common for both elements, which on its side is controlled from the slay in the sense of a relative movement thereto, are known. The transmission of the disturbance impulse to the releasing device is effected in such a stop motion by arresting the relative movement of the common control part after a free falling of the feeler.

It is further known to adjust the stroke of the lifter in such intermediate weft stop motions. This arrangement, however, plays a subordinate role for the correct adjustment of the weft stop motion because with it can only be obtained that the control takes place in another vertical position of the lifter. It is essential for the correct operation of an intermediate weft stop motion to adjust the stop motion so that the control is extended over the whole range of the warp threads.

In so far as known stop motions work only with one or with a number of feelers, they cannot control, on thread breakage, the fabric in its entire width; they have, moreover, the disadvantage that they can supervise the thread only on its local existence and not on its stretching.

The invention overcomes all the difficulties enumerated and represents an important advance in the domain of intermediate weft stop motions with feeler and lifter of the kind initially mentioned. According to the invention with such an intermediate weft stop motion the relative movement of the control part to the slay is adjustable.

Preferably a single adjusting means serves for the adjustment of the relative movement of the control part.

A constructional example for the invention is illustrated in the annexed drawing.

Here, *a* designates the lay-beam, *b* the reed, *c* the breast beam and *d* a shuttle. The weft needle *e* is rotatably mounted in *f* on the lay-beam *a* and bears with a locking lever *g* on a rail *h* displaceably mounted longitudinally on the lay-beam *a*, the rail *h* having a recess *y*. To the rear of, and somewhat above, the weft needle a fork *k* is mounted in the pivotal point *i* on the lay-beam which is controlled by a cranked rod *m*. The rod *m* is rigidly connected with the rail *h*. On the other side a fork *l* is rigidly connected with the fork *k* and is capable of swinging with *k* around the pivotal point *i*. The cranked rod *m* slides in this fork *l*. On the left end of the rail *h* is pivotally jointed a rod *o* which is adjustable as to its length, which is connected at *p* likewise pivotally with a rod *q*. The rod *o* is formed of two parts having oppositely threaded ends which are engaged by the nut *z* so that the effective length of the rod may be adjusted by turning the nut *z*. *q* is mounted so as to be longitudinally displaceable on the breast beam *c* and is assured against movement to the right by the stop *r* and to the left by the spring *s*.

The fabric is indicated partly by the lower warp threads *u* and the upper warp threads *v*, as well as by the weft threads *w*. The lay beam is further provided with a recess *x* in which the weft needle *e* and the fork *k* can engage.

The above arrangement operates as follows. According to the drawing the pick has just taken place on the right side. The fork *k* lies under the influence of the guide *m* in the recess *x*, until the shuttle has passed this latter, whilst the weft needle *e*, in consequence of the lever *g* sliding on the rail *h*, turns aside towards the top. After the shuttle, as indicated, has passed the weft stop motion, the fork is moved upwards and lifts the weft thread *w* from the lower threads *u* of the shed to near the upper warp threads *v*. Simultaneously the recess *y* of the rod *h* arrives under the lever *g* connected rigidly with the needle *e* so that the weft needle *e* bears on the weft thread *w* held tight by the fork *k*, but, however, so high that the left side of *h* with a taut weft thread can slide below the lever *g*.

When once the recess *y* has been passed a release for this weft can no longer take place. If, however, the weft thread breaks, before the left edge of the recess *y* has passed the needle, or if the weft bobbin has run out, the lever *g* drops into the recess *y* and the needle *e* into the recess *x*. Henceforth the rail *h* can no longer move further to the right; during the further movement of the slay in the direction of the arrow, therefore, the rod *o* must move over the rod *q* towards the left and thereby tension the spring *s*. This movement of *q* can be used in a known way mechanically or electrically for immobilizing the loom. If the slay during further running reverses its direction lever *g* slides up on the right bevelled or rounded side of the recess *y* and the needle is again swung out.

Because the rod *o* is made adjustable the rail *h* can be so adjusted that the field of supervision is extended to the time at which the shuttle becomes stationary in the box; that is throughout the whole field of the warp threads.

In the case that the disturbance takes place just at that moment when the left edge (release edge) of the recess *y* passes under the needle, after the falling of the needle a further

relative movement of the release edge, and of the rail *h*, against the slay *a* would be prevented. The lifter is disposed then in a raised position and would, therefore, during the further movement of the slay and the consequential closing of the shed tear the fabric. Care must be had, therefore, that the lifter is lowered, still before the feeler in case of disturbance has connected the rail *h* rigidly with the slay. Therefore the adjustment must take place so that the rail *h* itself in the case of a disturbance taking place on the extreme limit of the field of supervision, and therefore in the range of the last warp thread, can still make an additional path relatively to the slay, which is then utilized for lowering the lifter.

The fine adjustment necessary therefor can also take place for example by adjusting the length of the rod *o*.

On the falling of the needle in consequence of weft breakage the locking lever *g* leads the needle through such an angle that it reaches the release position before the falling feeler has passed through the lower warp threads. This offers a security therefor, that the needle itself cannot be caught in the lower warp threads, which greatly prejudices previously known weft stop motions.

I claim:

1. In a loom, an intermediate weft stop motion located within the shed comprising a feeler and a lifter, a lay, a single control part driven by the lay adapted to control both the feeler and the lifter, means adapted to prevent movement of said control part in the absence of a taut thread, and a single regulating device for adjusting the relative arrangement between a flying bobbin and said control part in the stop position.

2. In a loom, an intermediate weft stop motion located within the shed comprising a feeler and a lifter, a lay, a single control part driven by the lay adapted to control the feeler and the lifter, a stop member adapted to prevent the movement of said control part in the absence of a taut thread, said stop member connected with the feeler and extending therefrom by such an angle that it reaches the stop position before the feeler has passed through the lower warp threads, and means for adjusting the relative arrangement between a flying bobbin and the control part in the stop position.

3. In a loom an intermediate weft stop motion located within the shed comprising a feeler and a lifter, a lay, a unitary control part driven by the lay adapted to control both the feeler and the lifter, means adapted to prevent the movement of said control part from being imparted to the feeler when there is a proper taut supply of the weft, and a single adjusting means for timing the operation of said movement preventing means.

4. The device as claimed in claim 2 in which the stop member is rigidly connected with the feeler.

5. In a loom an intermediate weft stop motion located within the shed comprising a weft needle and a lifter, a lay-beam, said needle and said lifter being pivotally supported on said beam, a rail movably mounted with respect to said beam, means carried by said rail adapted to engage said lifter, and means carried by said needle adapted to engage said rail, said last mentioned means being operably responsive to the absence of a taut thread to prevent movement of said rail with respect to said beam.

6. In a loom an intermediate weft stop motion located within the shed comprising a movable weft needle adapted to rest on and to be held in one position by means of a taut thread, a lifter, a lay-beam, said needle and said lifter being carried by said beam, means movably mounted with respect to said beam, said means being adapted to engage said lifter and said needle, and means carried by said needle adapted to prevent movement of said first mentioned means with respect to said beam when said needle moves in response to the absence of a taut thread.

WILHELM LOHSSE.