

(No Model.)

W. McMICHAEL.
LOOSE REED MOTION FOR LOOMS.

No. 533,314.

Patented Jan. 29, 1895.

FIG. 1.

FIG. 2.

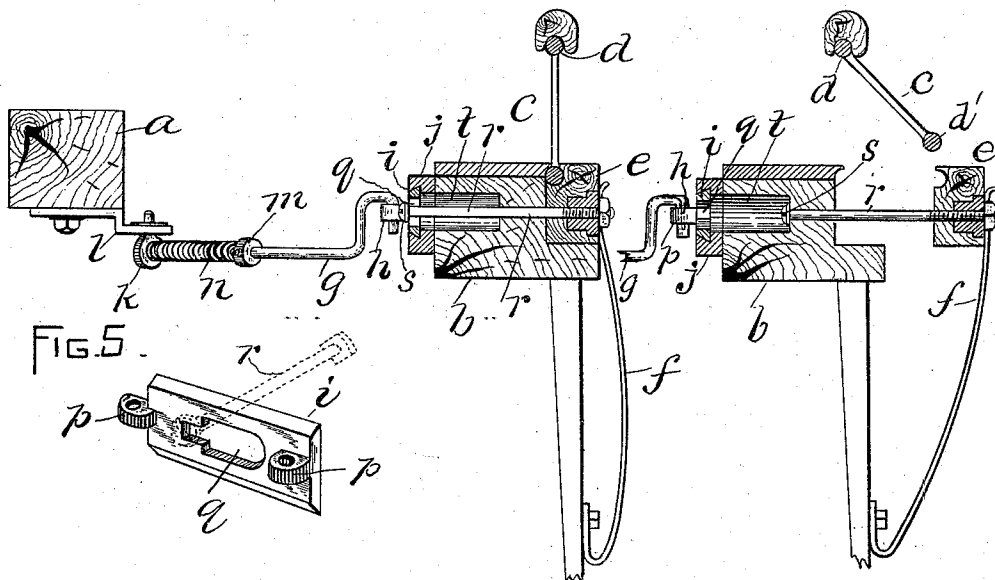


FIG. 5.

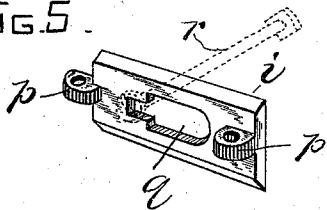


FIG. 3.

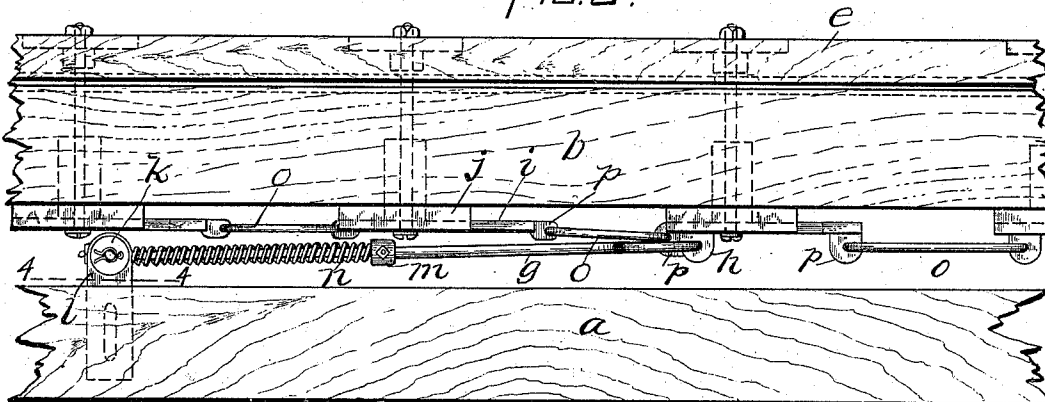
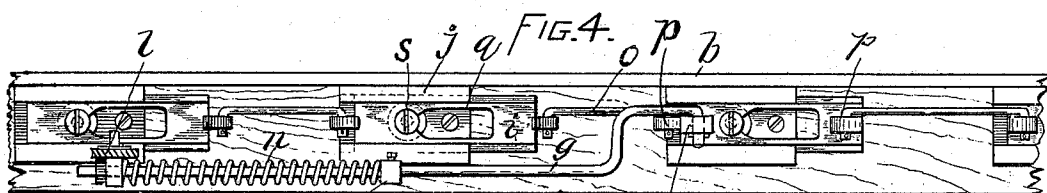


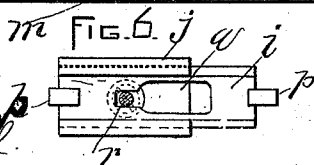
FIG. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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LOOSE-REED MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 533,314, dated January 29, 1895.

Application filed March 30, 1894. Serial No. 505,697. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McMICHAEL, of Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Loose-Reed Motions for Looms, of which the following is a specification.

This invention has relation to so-called "loose-reed motions" for looms, that is, contrivances whereby, in case of a lodgment of a shuttle in the shed, or other similar happening, the reed will be allowed to yield or swing back, preventing a "smash."

It is the object of my invention to provide improvements in this class of devices which will simplify their construction and render them certain in their operation.

The invention consists of the improvements which I will now proceed to describe in detail and point out in the appended claims.

Reference is to be had to the drawings hereto annexed and forming a part of this specification, as also the letters of reference marked on the drawings, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings—Figure 1 is a sectional end view of the breast-beam, lay and reed of a loom equipped with my improvements, the reed being in normal position. Fig. 2 is a similar view, omitting the breast-beam, and some of its connections, and showing the reed as unlocked, the lay having moved forward. Fig. 3 is a top or plan view of a part of what is shown in Fig. 1, the lay being moved forward. Fig. 4 is a front view, partially in section, of the part of the lay shown in Fig. 3, the section being taken on the line 4—4 of the last-mentioned figure. Fig. 5 is a perspective view of one of the reed locking plates. Fig. 6 is a front view of one of the locking plates and its guides, showing the locked position of the plate, the bolt being represented in section.

In the drawings—*a* designates the breast-beam, *b*, is the lay, and *c*, is the reed of a loom. The upper bar, *d*, of the reed is pivotally or hingedly connected with its support so that it may be swung on the said bar, say from the position in which it is shown in Fig. 1, to that

in which it is represented in Fig. 2, the position in Fig. 1 being the normal and that in Fig. 2 the unlocked or released and swung-back position.

e is the holding-bar between which and the lay proper the lower bar *d'* of the reed is held when the latter is in normal position.

The holding bar is supported so that it may be locked in place and rigidly held to maintain the reed in normal position when the latter acts to beat up the weft, and yet be released so as to be moved back and release the lower bar of the reed to permit it to swing backward.

The holding-bar is kept in normal position by means of a spring or springs, *f*, free ends of which bear lightly thereagainst with sufficient force to maintain it in place when unlocked, the springs at their opposite ends being secured to some convenient part of the frame-work of the machine; and also by a spring-pressed rod or rods connected with the breast-beam, and through the medium of suitable contrivances with the locking means of the holding-bar.

In all instances when the lay is back the holding-bar will be unlocked, though yet maintained in normal position by the springs, *f*, which bear against it, the bar is unlocked and the reed free to swing against the yielding resistance of the springs *f* during the first part of the forward movement of the lay; but as the lay advances still farther to beat up the weft, the holding-bar will be rigidly locked in place by the action of the spring-pressed rod upon the locking devices. This arrangement is provided in order that in case a shuttle becomes lodged in the shed the reed may be released and allowed to swing back as the lay starts forward and the reed comes in contact with the shuttle, and so avoid a "smash."

Referring to the drawings, *g*, is the before-mentioned spring-pressed rod, the inner end of which is pivotally connected with an ear, *h*, on one of the locking plates *i*. (See Fig. 4.) The latter is adapted to slide and be guided in a plate, *j*, connected to the forward face or side of the lay, *b*. The rod, *g*, at its outer end is arranged to move in a block or piece, *k*, swiveled in a bracket, *l*, connected to the

under side of the breast-beam, *a*. Between the block, *k*, and a collar, *m*, fixed on the said rod, *g*, there is interposed a spring, *n*.

There are a plurality of locking-plates, *i*, on the front face of the lay, and said locking-plates are connected by links *o* attached to the ears, *p*, as shown, so that when one plate is moved the balance must be moved in unison therewith. Each locking-plate, *i*, is provided with an elongated slot, *q*, through which passes a bolt, *r*, the forward part of the backward end of which is connected with the holding-bar, *e*. The forward end of the bolt, *r*, is provided with a nut or head, *s*, and one part of the slot, *q*, is widened so as to permit the head of the bolt to pass therethrough, while the other part of the slot is narrower, so that while the bolt may move longitudinally therein the head thereof cannot pass through it.

The lay is counter-sunk, as at *t*, so as to permit the head of the bolt, *r*, to pass into the said counter-sink, in case of necessity.

In the operation of the invention, when the shed is unobstructed, the lay will move backward and forward with its usual functions, and with the parts in the position in which they are represented in Fig. 1, but should a shuttle become lodged in the shed, as the reed is moved forward, it will be resisted, and the head, *s*, of the bolt, *r*, being in the widened part of the slot, *q*, the said bolt and holding-bar will be moved back against the stress of the spring, *f*, as shown in Fig. 2, the head, *s*, of the bolt passing into the counter-sink, *t*, and the reed swinging back from normal position. When there is no obstruction in the shed, when the lay moves forward, the inner end of the rod, *g*, by reason of it moving in the path of a circle, will move the locking-plates, *i*, so that the shank of the bolt, *r*, will enter the narrow portion of the slot, *q*, as shown in Fig. 6, and so prevent the head of the bolt from moving through the same, and in this way lock the parts and hold the reed rigidly in place. When the shank of the bolt moves into the narrow part of the slot, *q*, the rod, *g*, will still be allowed to yield longitudinally against the force of the spring, *n*. In

this way a very efficient loose-reed motion is provided and one that is at all times certain in its operation.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, it is declared that what is claimed is—

1. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a holding-bar mounted upon said lay, a spring arranged to act upon said bar, a breast beam, a spring-pressed rod connected therewith, and means joining said rod with said holding-bar.

2. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a holding-bar, springs for engaging said bar, bolts connecting said bar with sliding plates upon opposite sides of said lay, a breast beam, and a spring-pressed rod connecting said plates with said breast beam.

3. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a movable holding-bar mounted thereon, springs for engaging said bar, sliding plates upon the front of said lay, connections between said plates for moving them in unison, bolts for joining said plates with said bar, a breast beam, and a spring-pressed rod connecting said beam and sliding plate.

4. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a holding-bar yieldingly mounted thereon, sliding locking-plates on the front of said lay, provided with slots having narrowed portions, bolts secured to said holding-bar provided with enlargements on opposite ends for engaging the plates, a breast beam, and a spring-pressed rod connecting said beam and plates.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 27th day of March, A. D. 1894.

WILLIAM McMICHAEL.

Witnesses:

JOHN J. HEFFERNAN,
MALCOLM CAMPBELL.