(No Model.)

W. McMICHAEL.

LOOSE REED MOTION FOR LOOMS.

No. 534,615. Patented Feb. 19, 1895.

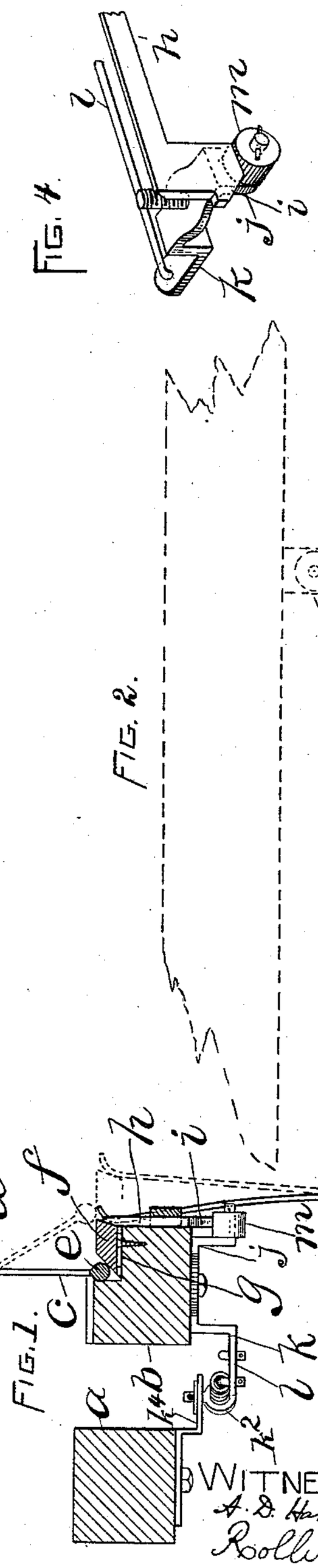

FIG. 4.

FIG. 2.

FIG. 3.

FIG. 1.

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LOOSE-REED MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 534,615, dated February 19, 1895.

Application filed March 30, 1894. Serial No. 505,698. (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 means for preventing "smashes" in the operation of weaving by reason of a shuttle becoming lodged in the shed, or other similar obstruction occurring in the shed to oppose the advance of the reed in its advance to beat up the weft.

It is the object of the invention to provide improved means for operating the locking plate or bar to maintain the reed in place through the medium of the holding-bar, which improvements shall be simple in construction and thoroughly efficient in their mode of operation.

The invention consists in providing the locking-bar with cams or inclines with which one arm of a lever pivoted upon the lay may be arranged to co-operate in such manner as to raise the bar when the lay moves forward, and allow the said bar to fall by gravity when the lay moves back, the said lever having operative means connecting it with the breast-beam, all as I will now proceed to set forth.

Reference is to be had to the annexed drawings and to the letters marked thereon, forming a part of this specification, 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 lay being represented as moved forward, and the reed as in normal position. The dotted lines refer to the position taken by the reed, the holding-bar and spring when the reed is swung back. Fig. 2 is a broken plan view of what is shown in Fig. 1, and representing in addition by dotted lines, the relative positions of the respective parts when separated by the backward movement of the lay. Fig. 3 is a broken view of the rear side of the lay and its equipments relating to my improvements. Fig. 4 is a perspective view of a detail of the invention, hereinafter more particularly referred to.

In the drawings—*a* designates the breast-beam. *b* is the lay, and *c* is the reed. The latter is so supported as that it may be permitted to swing upon its upper bar, *d*, as a pivot, the lower bar, *e*, being allowed to move backward when released.

f is the holding bar suitably secured on an offset, *g*, of the reed so as to have a limited backward and forward movement, as indicated by full and dotted lines in Fig. 1. This bar *f* has its front and rear edges beveled, as shown, to allow for reeds of different sizes. I make no claim in this application as to the form of the bar *f*, since this feature of my invention is fully described and claimed in my application filed March 30, 1894, Serial No. 505,696.

h is the locking-bar or plate arranged in suitable guide-ways *h'* on the rear side of the lay so as to be movable vertically up behind the holding bar to lock the reed in place, as shown in full lines in Fig. 1, or be lowered to release the said holding bar and reed and permit the latter to swing back, as is shown in dotted lines in the last-mentioned figure.

The locking bar is provided on its lower edge or side with inclines or cams, *i*, beneath which one arm, *j*, of a lever fulcrumed on the lower side of the lay is adapted to operate so as to move against said inclines and under the lower edge of the locking bar, and raise the same and hold it raised, as shown in full lines in the drawings, or be moved out from thereunder, as is shown by dotted lines in Fig. 2, and allow the locking bar to drop. The other arm, *k*, of the said lever is pivotally connected with the inner end of a spring-pressed rod, *l*, which rod is swivelly connected at its outer end with the breast-beam by being passed through the eye-bolt, k^2, in the lug, k^4, on the breast beam. The nut, k^3, on the outer end of the rod prevents it being withdrawn from the bolt. The spring, k^5, is arranged on the rod, *l*, between the eye-bolt, k^2, and the collar, k^6, secured to the rod, *l*. By this arrangement the rod, *l*, can slide in its swivel or bearings against the resistance of the spring, k^6. A connecting rod or bar, *k'*,

Fig. 2, is employed to unite the several arms, *k*, so that they must move in unison.

In the operation of the loom, when the lay moves forward, the rod, *l*, will draw upon the arm, *k*, of the lever, and move the arm, *j*, (which may be provided with an anti-friction roller, *m*) against the inclines or cams, *i*, and raise the same and lock the reed in place through the medium of the holding-bar. When the lay moves backward the spring-pressed rod will act upon the said lever and move its arm, *j*, from under the locking bar, allowing it to fall and release the holding bar and reed, so that as the latter is started forward to beat up a weft, in case a shuttle is encountered in the shed, the reed may swing back, as shown by dotted lines in Fig. 1, and so avoid a "smash."

The springs, *n*, which have one end raised against the holding-bar and the other end secured to the framework of the loom, which bear comparatively lightly against the holding bar upon its rear side prevent accidental displacement of the latter and the reed, when the locking bar is lowered or moved to unlocking position.

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, the breast-beam, the lay, the movable reed, the movable holding-bar on the top of the lay, the movable locking plate or bar upon the rear of the lay provided with inclines or cams, levers pivoted upon the lower side of the lay, each provided with an arm adapted to act upon the said inclines or cams, and operative means connecting the other arms of the levers with the breast-beam, substantially as and for the purpose described.

2. In a loose reed motion for looms, in combination, the breast-beam, the lay, the movable reed, the movable holding-bar on the top of the lay, the movable locking plate or bar upon the rear of the lay provided with inclines or cams, levers pivoted upon the lower side of the lay, each provided with an arm, a connecting rod uniting the other arms of said levers, and operative means connecting the said last-mentioned arms of the levers with the breast-beam, substantially as and for the purpose described.

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.