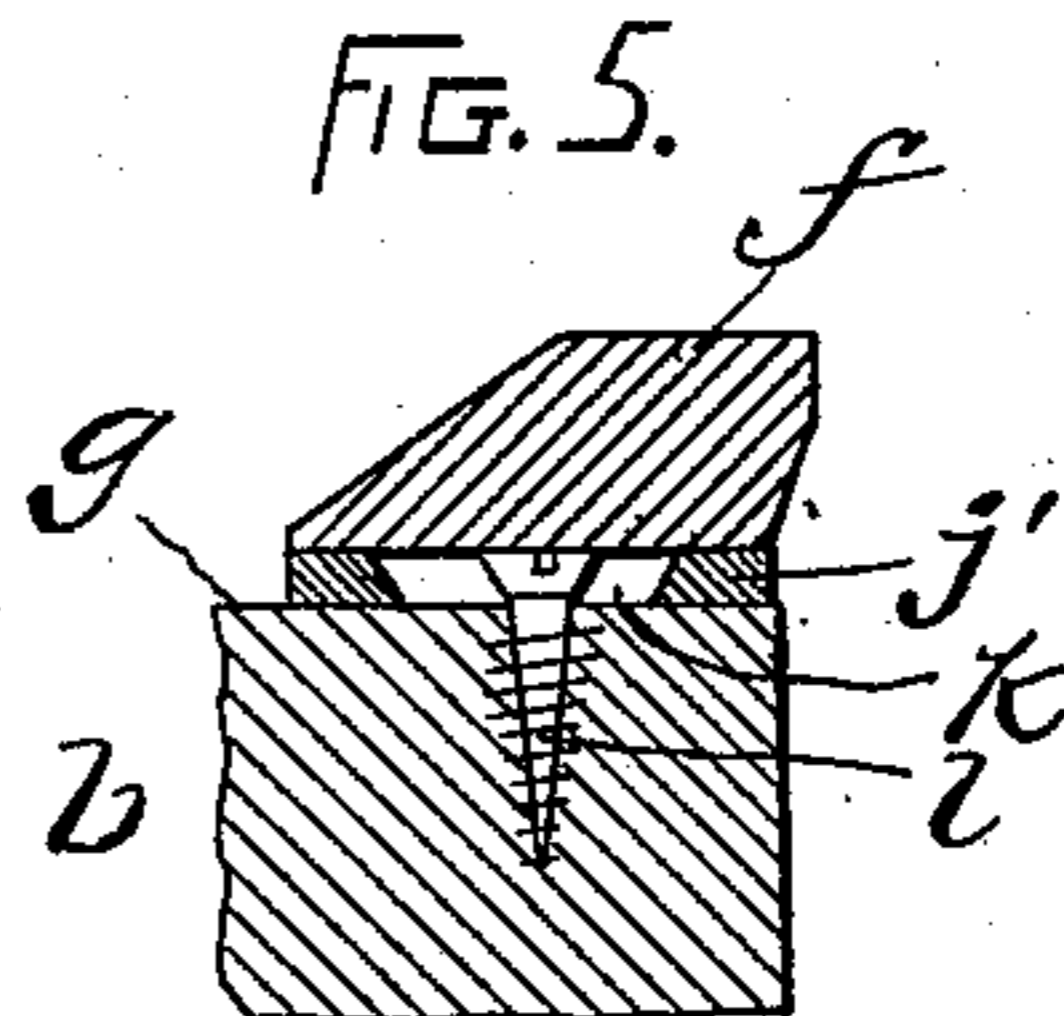
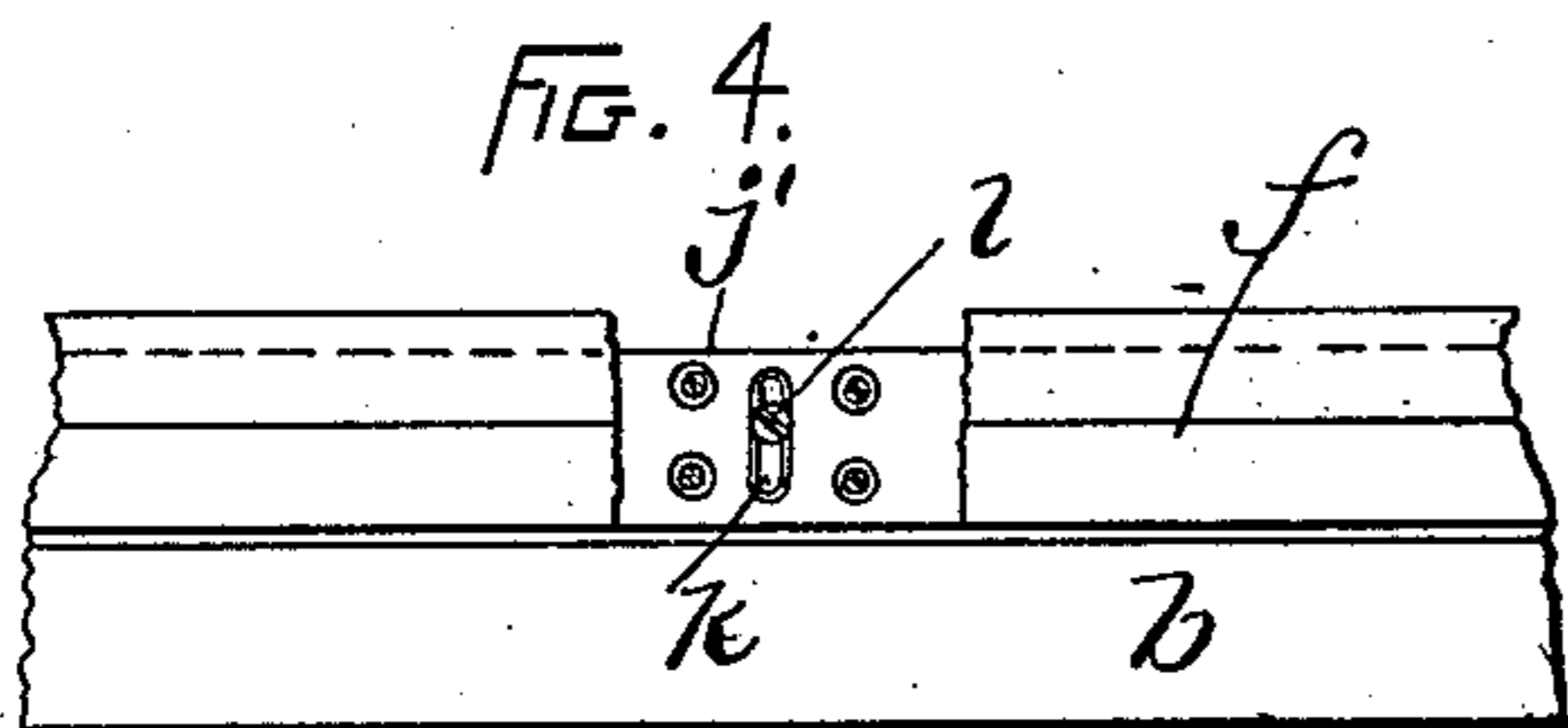
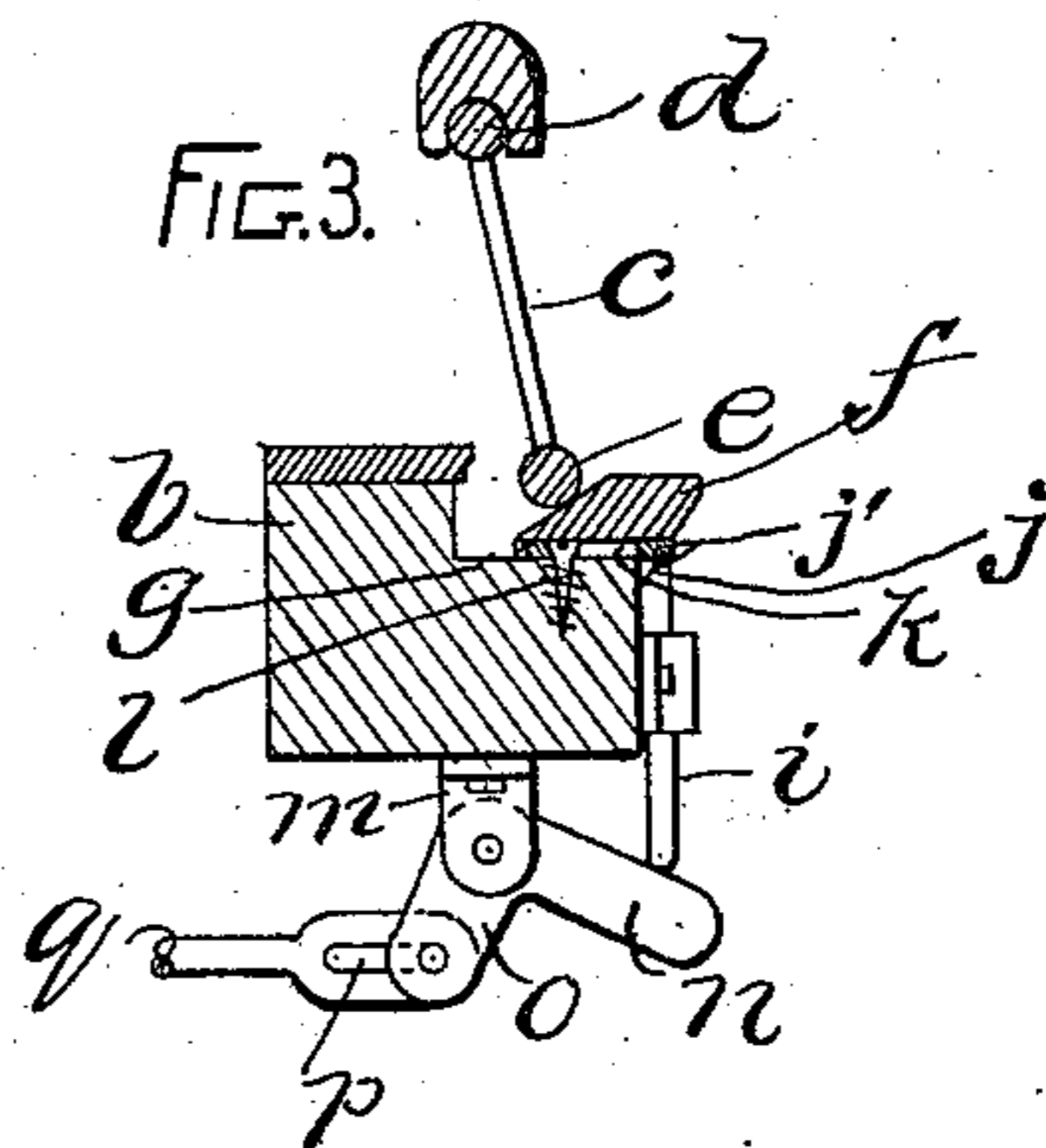
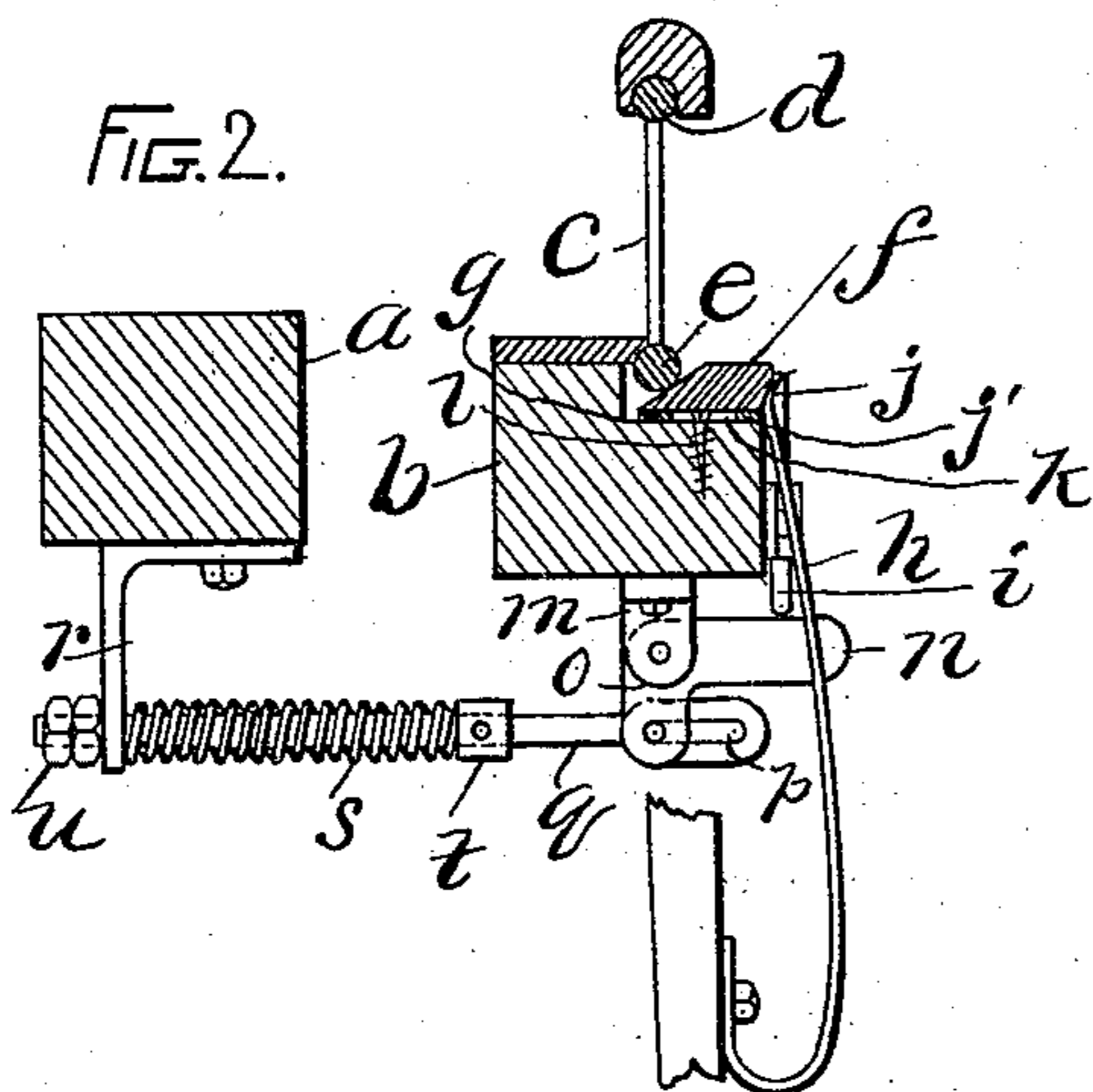
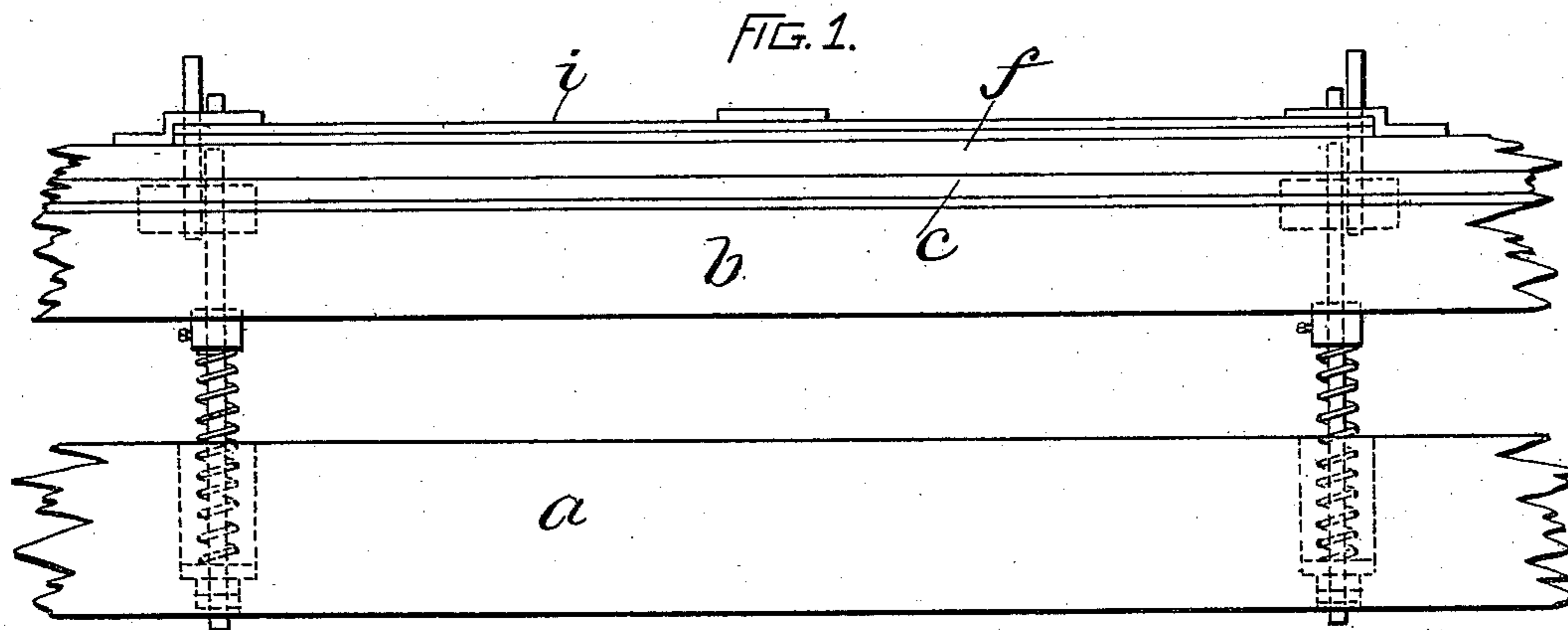


(No Model.)

W. McMICHAEL.  
LOOSE REED MOTION FOR LOOMS.

No. 534,614.

Patented Feb. 19, 1895.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM McMICHAEL, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR TO THE  
WOONSOCKET MACHINE AND PRESS COMPANY, OF SAME PLACE.

## LOOSE-REED MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 534,614, dated February 19, 1895.

Application filed March 30, 1894. Serial No. 505,696. (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 contrivances in looms for preventing "smashes," so called, in case of a shuttle, from any cause, becoming lodged in the shed; and the particular kind of contrivances to which the invention appertains is loose-reed motions.

It is the object of the invention to provide such improvements as will simplify the construction of loose-reed motions, enhance their usefulness, and render them certain in their operation.

To these ends the invention consists of the improvements which I will now proceed to describe in detail and point out with particularity in the appended claims.

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 plan view of a portion of the lay and breast-beam of a loom, equipped with my improvements. Fig. 2 is a cross-sectional view thereof, showing the lay as moved forward, but with the reed as in locked position. Fig. 3 is a cross sectional view of the lay and some of its equipments, showing the lay as moved forward, and the reed as in unlocked or released position. Fig. 4 is a plan view of a part of the lay and some of its adjuncts, parts being shown as broken out, the better to illustrate the construction of devices therebeneath. Fig. 5 is a sectional detail view hereinafter more particularly referred to.

Of the drawings—*a* designates the breast-beam and *b* the lay of the loom.

*c* is the reed, and, *d*, the upper and, *e*, the lower bar of the same. The upper bar, *d*, is pivotally supported so that the lower bar may be swung backward and forward when permitted so to do.

In carrying out the purpose of the invention, the reed will be locked against swinging

motion in the latter part of its forward movement, when acting to beat up the weft, and also manifestly in the first part of its backward movement; and it will be unlocked in the first part of its forward movement and the last part of its backward movement, so that it can swing upon its pivotal support in case it meets with an obstruction, such as a lodged shuttle in the shed.

*f* designates what I term a holding-bar which is constructed and arranged so that it can move to a limited extent backward and forward on an offset, *g*, formed on the lay, and when moved forward may rest with its forward side or face against the lower bar, *e*, of the reed, and hold the latter in place, as shown in Fig. 2; and when the said holding-bar is moved back the lower bar, *e*, may be free to swing backward, as represented in Fig. 3.

*h* designates springs having one of their ends secured to some convenient part of the frame of the machine, while their free ends are arranged to bear against the rear side or face of the holding bar to maintain the same in place against other than undue pressure. Both the front and rear sides of the holding bar are, by preference, somewhat beveled, as shown, so as to accommodate the invention to reeds of varying size, as will presently be more fully explained.

To hold the reed rigidly in place, I provide a vertically movable locking bar, *i*, on the back side of the lay, which locking plate is guided in suitable ways connected with the lay. The upper forward edge of the locking plate is beveled, as at *j*.

The object of beveling the locking-bar, as described, is to provide for reeds of different size, since if a large-size reed should be used its bearing on the holding bar would be likely to be such as to move the latter back so far, that if the locking plate were not beveled it would catch under the holding bar, and so fail to lock it in place. By beveling the locking bar, in case the holding bar should be moved back beyond the line of the rear side of the lay the locking plate may still move up far enough to lock the holding bar in place. This operation is facilitated by beveling the rear side of the holding bar, though this is

not essential where the locking bar is beveled, nor is it essential in all cases to bevel the latter when the rear side of the holding bar is beveled, as will be readily understood. The beveling of the front side of the holding bar also serves to assist in accommodating the invention to reeds of varying size, and to permit the reed to readily swing backward.

$j'$  designates a plate secured to the lower side of the holding-bar, and transversely through this plate are formed slots,  $k$ , to receive the shanks of headed screws,  $l$ , the slots,  $k$ , not being sufficiently large to permit the heads of the screws passing through the same. By this means the holding bar is kept on the lay, and guided in its movements backward and forward. In assembling these parts (see Fig. 5), the plates  $j'$  are placed upon the lay and the screws  $l$  inserted in the slots  $k$  and screwed into the lay. The bar  $f$  is then placed in position upon the plates  $j'$  and secured thereto by screws passing down through the bar  $f$  from the top and into holes in the plates  $j'$ . These screws are shown in section in Fig. 4.

To move the locking plate vertically in proper time I fulcrum elbow levers on brackets,  $m$ , secured to the bottom of the lay, and arrange the said levers so that the lower edge of the locking plate may rest upon the substantially horizontal arm,  $n$ , of the said lever, and pivot the other arm,  $o$ , of the said lever in a slot,  $p$ , formed in the inner end of a rod,  $q$ , which at its outer end passes through a hole formed in a bracket,  $r$ , secured to the breast-beam. A spring,  $s$ , surrounds the rod,  $q$ , and is arranged between a collar,  $t$ , on the said rod and the bracket,  $r$ , so as to operate normally to press the said rod inward and operate the elbow lever with a tendency to raise the locking-plate. Nuts,  $u$ , are turned upon the outer end of  $q$  to prevent its disengagement from the bracket,  $r$ .

In the operation of the invention when the lay moves back the rod,  $q$ , will be made to act upon the said elbow lever and move it from the position in which it is shown in Fig. 2 to that in which it is represented in Fig. 3, allowing the locking bar to drop and release the holding bar, thus unlocking the reed. When the lay moves forward, the operation just described will be reversed, and the parts will be moved from the position in which they are shown in Fig. 3 to that of Fig. 2, raising the locking bar and locking the holding bar and reed in place so that the latter can act to beat up the weft. It will be understood that the reed will not be swung back, as shown in Fig.

3, unless an obstruction like a shuttle in the shed is met with as the lay moves forward, in which case the reed will be released and swing back, thus preventing a "smash."

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 movable holding-bar having a beveled edge, a movable locking-plate arranged to engage the beveled edge of said bar, and means connected with some stationary portion of the loom for operating said locking-plate.

2. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a movable holding-bar provided with a beveled edge, a movable locking-plate also provided with a beveled edge and arranged to engage the beveled edge upon said bar, and means connected with some stationary portion of the loom for operating said locking-plate.

3. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a movable holding-bar having its front and rear edges beveled, a movable locking-plate, a breast beam, and means connecting said plate and beam, for operating the former.

4. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a movable holding-bar having its front and rear edges beveled, a movable locking-plate having a beveled edge arranged to engage the beveled edge upon the rear of said bar, a breast beam, and connections between said beam and plate operating the latter to lock the bar.

5. In a loose-reed motion for looms, in combination, a pivoted reed, a lay, a movable holding-bar having its front and rear edges beveled, a movable locking-plate having a beveled edge, a breast beam, an elbow lever fulcrumed on the lay and having one of its arms arranged to support the locking-plate and move the same vertically, and operative connections between the other arm of the said lever and a breast beam.

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.