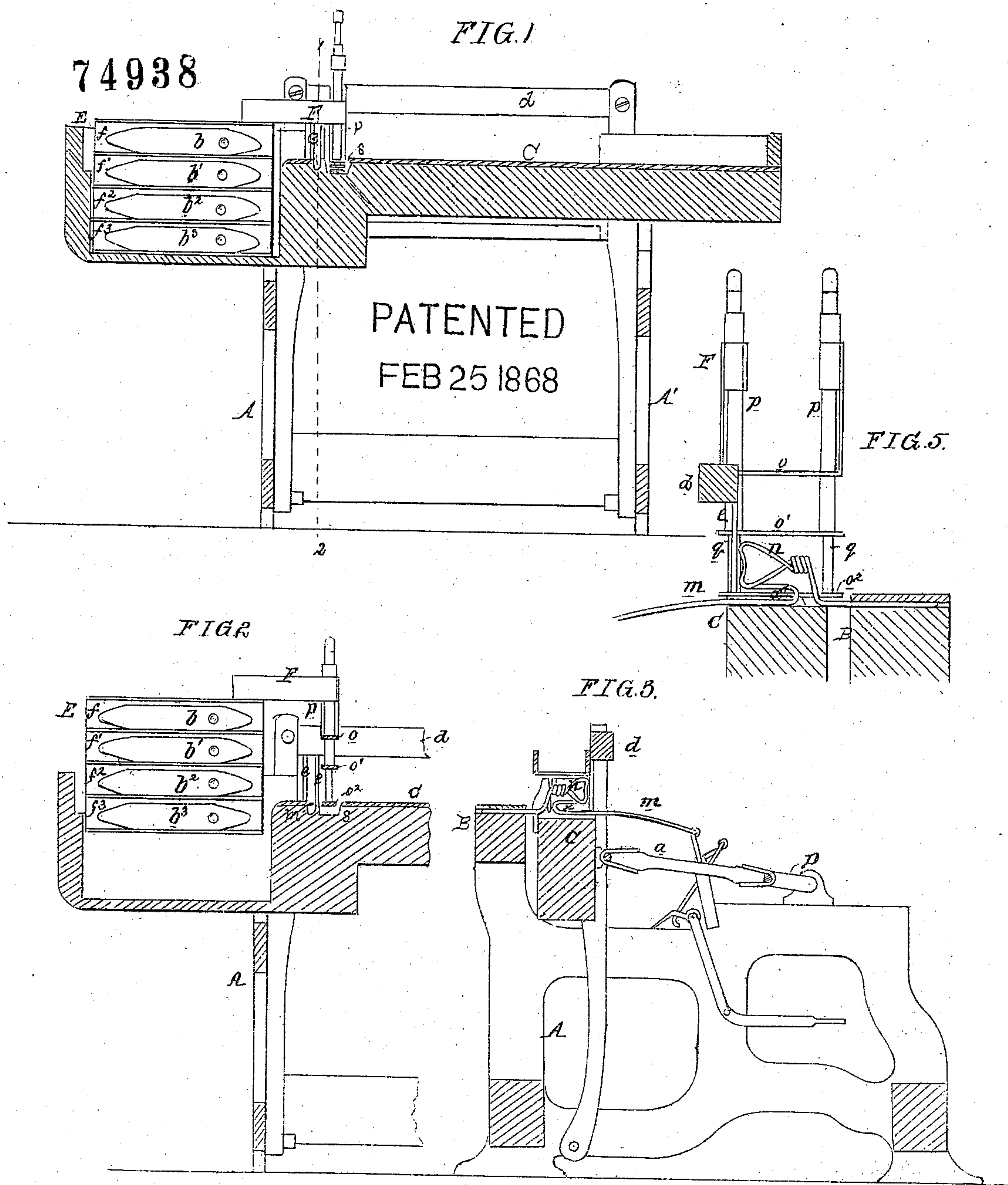


W. J. Quinn—Improvement in Looms.



Witnesses { *Wm. Albert Steel*
J. Parker

W. J. Quinn
By his Atty
H. Howson

United States Patent Office.

WILLIAM J. QUINN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
FURBUSH & GAGE, OF SAME PLACE.

Letters Patent No. 74,938, dated February 25, 1868.

IMPROVEMENT IN LOOMS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM J. QUINN, of Philadelphia, Pennsylvania, have invented an Improvement in Looms; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in drop-box looms, the said improvements consisting of devices fully described hereafter, by which the threads from the shuttles above and below the operating-shuttle shall not interfere with the free action of the "stop-motion."

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is a front elevation, partly in section, of sufficient of a drop-box loom to show my improvement.

Figure 2, the same, showing the operating parts in a different position.

Figure 3 is a transverse sectional elevation on the line 1-2, fig. 1.

Figure 4 is a sectional plan view of part of the loom; and

Figure 5 is a vertical section of part of the loom drawn to an enlarged scale.

A A' are the side frames, B is the breast-beam, and C the lathe of the loom, a vibrating motion being imparted to the lathe by a crank-shaft, D, to which it is connected by rods *a a*, as in ordinary looms. At one end of the lathe slides the usual drop-box E, in which are four compartments, *f, f¹, f², and f³*, containing the shuttles *b b¹ b² b³*, and which is operated by a jacquard-apparatus, a pattern-wheel, or a chain, in the ordinary manner. From the lathe to the hand-rail *d* extend vertical wires, *e e*, between which projects the rod *m* of the weft-fork, one end of the rod extending into a groove in the breast-beam B, and the other being connected to the stop-mechanism, for arresting the motion of the loom when the rod is moved towards the breast-beam. From the rod *m* project three bent wires or fingers, *n n n*, which are so arranged that the bars *e e* will pass between them, as in ordinary weft-forks, the front portion of each of the said fingers being bent to the concave form shown in fig. 5 of the drawing. That portion of the rod *m* directly beneath the fingers is bent, as shown in figs. 3 and 5, so as to form a recess, *x*, for a purpose described hereafter. To the drop-box E is secured a bracket, F, a cross-piece, *o*, on which is adapted to and (when the box is at the limit of its downward motion) fits in a recess, *s*, in the face of the lathe adjacent to the bars *e e*. On guides in the bracket F slide tubes *p p*, secured at their lower ends to a cross-piece, *o¹*, and in the said tubes slide guide-rods *q q*, which are connected at their lower ends to a cross-piece, *o²*, extending beneath the cross-piece *o¹*.

When the drop-box is at the limit of its downward movement, the cross-pieces *o o¹ o²* will be contained within the recess *s*, as shown in fig. 1, but when the box is raised the cross-pieces will be lifted from the recess, stops on the guides *p q* limiting the movement of the latter. When the drop-box E is in the position shown in fig. 1, the shuttle *b* in its movement across the lathe will carry its thread in front of the bars *e e*, and over the cross-piece *o*. When the frame is elevated so as to bring the shuttle *b¹* into operation, the cross-piece *o¹* will be level with the face of the lathe, and the shuttle will pass and carry its thread over the said cross-piece, and beneath the cross-piece *o*. In like manner, when the shuttle *b²* is in operation, its thread will be carried over the cross-piece *o²*, while the thread of the shuttle *b³*, when the frame is at the limit of its upward motion, will be carried over the recess *s*, and beneath the cross-piece *o²*. When the thread of any shuttle is across the bars *e*, and the latter approach the fingers *n*, the thread will strike the curved edges of the fingers, and the latter, and the rod to which they are attached, will be carried forward. Should the thread break, however, the rods *e* will pass between the fingers, the latter will remain at rest, and the motion of the loom will be arrested in a manner too well known to those familiar with the construction and operation of weft-forks for looms to need further description.

When a shuttle is in operation, the threads of those shuttles which remain quiescent, and are situated above the operating-shuttle, will pass from each elevated shuttle over the opposite cross-pieces and to the edge of the fabric, the threads being thus maintained in such an elevated position that they cannot be struck by the fingers *n* and interfere with the action of the stop-motion should the thread of the operating-shuttle break. The threads from the shuttle or shuttles below the operating-shuttle will pass over the rod *m* beneath the cross-pieces in the recess *s* and to the edge of the fabric, the recess *x*, formed by the bending of the rod *m*, receiving these

threads when the lathe is carried forward, so that they will not strike the fingers *n* and interfere with the action of the stop-motion.

Although the above-described devices may be applied to looms having drop-boxes at one end only of the lathe, they are especially applicable to looms in which drop-boxes are at both ends of the lathe, and in which it has heretofore been found difficult to prevent the threads of the shuttles not in operation from interfering with the action of the stop-motion.

I claim as my invention, and desire to secure by Letters Patent—

1. The combination, with a drop-box, of a series of self-adjusting plates or cross-pieces, *o o¹ o²*, whereby the threads of the shuttles above that in operation are held above the fingers of the weft-fork, substantially as and for the purpose described.

2. The weft-fork, provided with a recess, *x*, formed between the rod *m* and fingers *n*, as and for the purpose specified.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM J. QUINN.

Witnesses:

JOHN F. GOODWIN,

CHARLES HOWSON.