

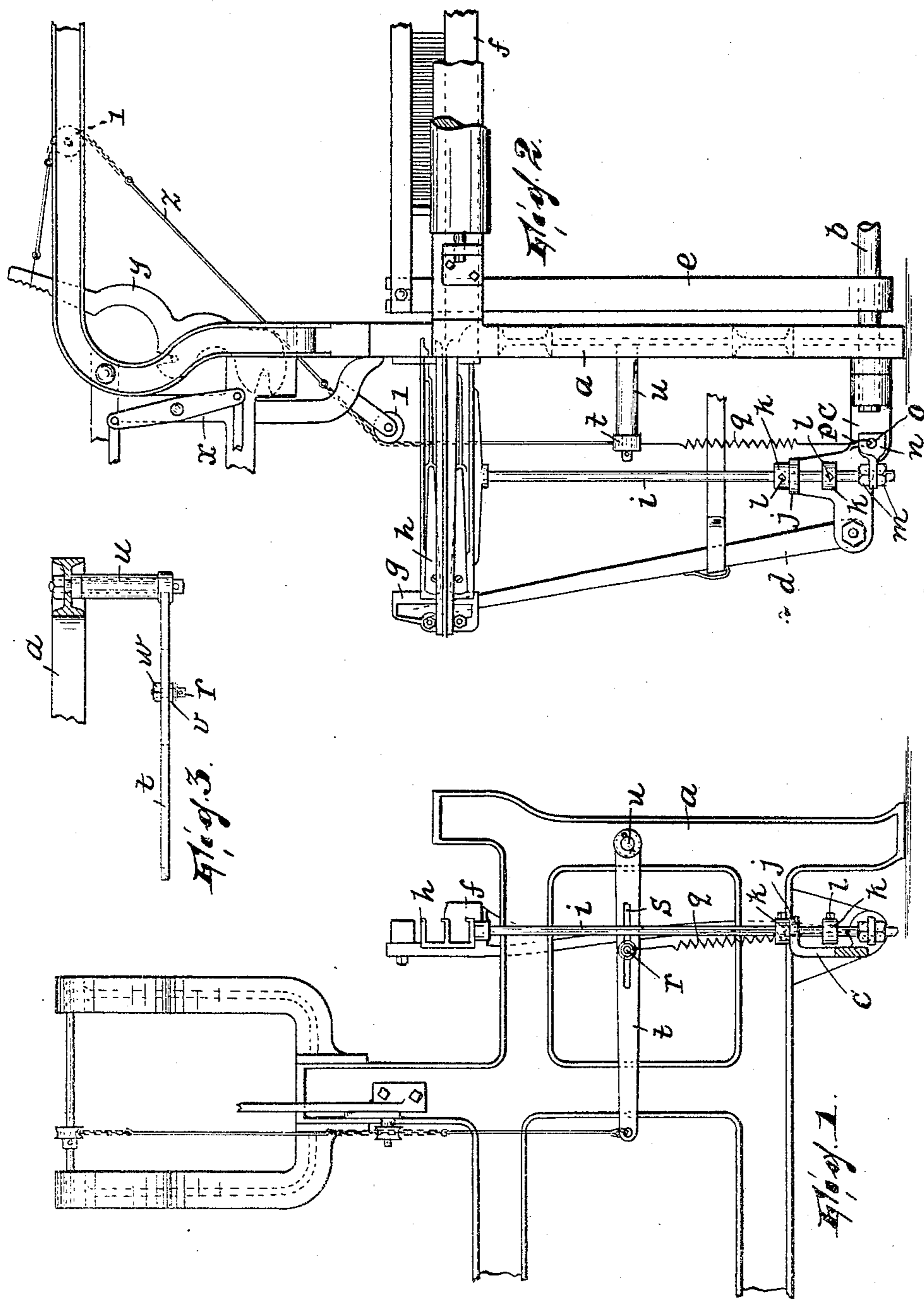
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PATENTED NOV. 8, 1904.

F. A. MEYERS.  
BOX MOTION MECHANISM FOR LOOMS.

APPLICATION FILED JULY 15, 1904.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## BOX-MOTION MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 774,488, dated November 8, 1904.

Application filed July 15, 1904. Serial No. 216,678. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK A. MEYERS, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Box-Motion Mechanism for Looms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention relates to box-motion mechanism for looms; and it has for its object to provide a simple, reliable, and comparatively inexpensive mechanism of this nature adapted especially for operating shuttle-boxes of simple type—say two-by-two or two-by-one.

The invention will be found fully illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of a portion of a loom with the improved box-motion mechanism attached thereto. Fig. 2 is a view in front elevation of what is seen in Fig. 1, and Fig. 3 is a detail view.

In the loom-frame *a* is journaled the usual rocker-shaft *b*, which carries the bracket *c*, in which the picker-stick *d* is journaled, and also the lay-swords *e*, supporting the batten *f*.

*g* is the usual frame projecting from the end of the batten and serving as a guide for the shuttle-boxes *h*, which are shown in the drawings as two in number and arranged to move vertically in the usual manner in said frame *g*.

*i* is the shuttle-box rod, the same being guided at its lower end in a projection *j* of the bracket *c*. This rod carries two stop-collars *k*, one above and the other below the projection *j* and each secured adjustably on the box-rod by means of a set-screw *l*. The stop-collars are set with reference to the distance which the box-rod moves in order to bring either of the two boxes in true alinement with the shuttle-way on the batten. The boxes are normally held by gravity in the down position, the upper stop-collar resting on the projection *j*. In this position the upper box is

of course alined with the shuttle-way on the batten. In order to bring the lower box in alinement with said shuttle-way, the boxes are lifted until the lower stop-collar engages the under side of the projection *j* and there held as long as required by the following mechanism:

Between clamping-nuts *m*, screwed onto the lower end of the box-rod, is held a foot-piece *n*. Through an eye *o* of this foot-piece extends a hook *p*, formed at the lower end of a spiral spring *q*, which is suspended from a stud *r*, arranged for adjustment in a slot *s* of a lever *t*, fulcrumed on a stud *u*, projecting from the loom-frame. In order to secure the stud *r* in a definite position in the slot *s*, it is formed with a shoulder *v* and carries a nut *w*, which coacts with said shoulder to clamp the stud in place. The stud *r* is preferably mounted in the lever *t*, adjacent the middle portion thereof.

*x* is a dobbie or other suitable form of head motion. To one of the jacks *y* thereof is secured the upper end of a flexible connection *z*, passing over pulleys 1, suitably journaled in the loom-frame and connected at its lower end to the free end of lever *t*.

In view of the foregoing it will be seen that if the jack *y* is made to move no less than is necessary to carry the box-rod the full distance between stop-collars *k* the positive positioning of the boxes relatively to the shuttle-way on the batten is assured. Moreover, the spring *q* not only accommodates any surplus movement which the jacks *y* might possibly have, but should the boxes become clogged by an improperly-boxed shuttle or otherwise permits lost motion, and thus saves damage to the mechanism.

As shown in the drawings, the mechanism is adapted for a two-by-one arrangement of shuttle-boxes. It can be adapted to a two-by-two arrangement by simply duplicating the mechanism, one being placed on one end and the other on the other end of the loom.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the loom-frame, the

batten structure, a movable set of shuttle-boxes having a box-rod, means for guiding said shuttle-boxes and the box-rod, means for limiting the movement of said shuttle-boxes in both directions, actuating means for the shuttle-boxes arranged in the loom-frame, and operative connecting means between said actuating means and the box-rod, said connecting means comprising a spring as one of the parts thereof for transmitting power from the actuating means to the box-rod, substantially as described.

2. The combination of the loom-frame, the batten structure, a movable set of shuttle-boxes having a box-rod, means for guiding said shuttle-boxes and the box-rod, means for limiting the movement of said shuttle-boxes in both directions, actuating means for the shuttle-boxes arranged in the loom-frame, a lever fulcrumed in the frame, operative connecting means between said actuating means and the lever, and operative connecting means between said lever and the box-rod, said last-named means comprising a spring as one of

the parts thereof for transmitting power from the actuating means to the box-rod, substantially as described.

3. The combination of the loom-frame, the batten structure, a movable set of shuttle-boxes having a box-rod, means for guiding said shuttle-boxes and the box-rod, means for limiting the movement of said shuttle-boxes in both directions, a foot-piece adjustably secured to the box-rod, a lever fulcrumed in the frame, a stud adjustably arranged in said lever, a spring connecting said stud and the foot-piece, actuating means for the shuttle-box arranged in the loom-frame, and operative connecting means between said lever and the actuating means, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of July, 1904.

FRANK A. MEYERS.

Witnesses:

JOHN W. STEWARD,  
JOSEPH N. POHLY.