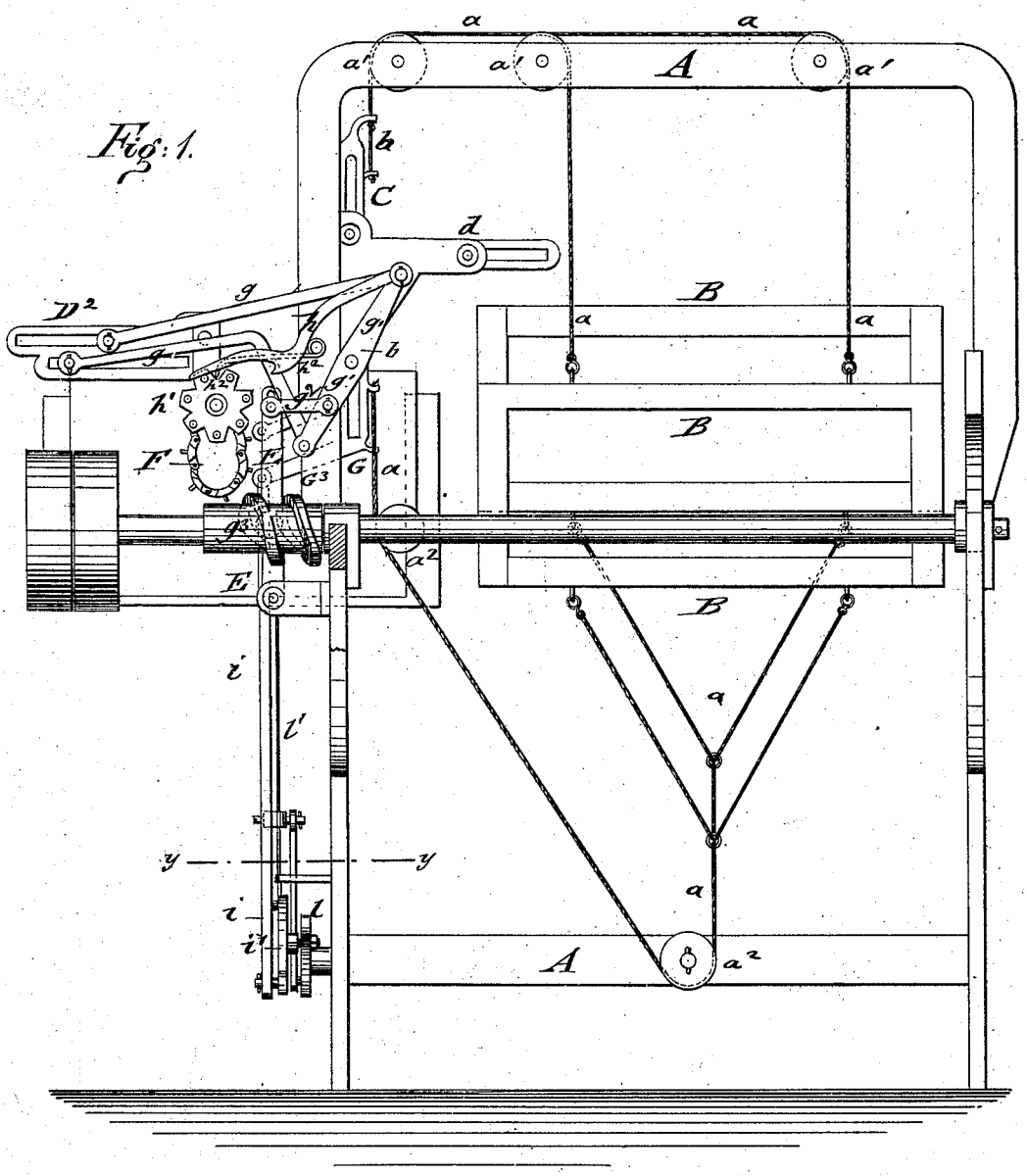
3 Sheets—Sheet 1.

J. BARKER.

Shuttle-Box Motion for Looms.

No. 211,126. Patented Jan. 7, 1879.

Fig. 1.



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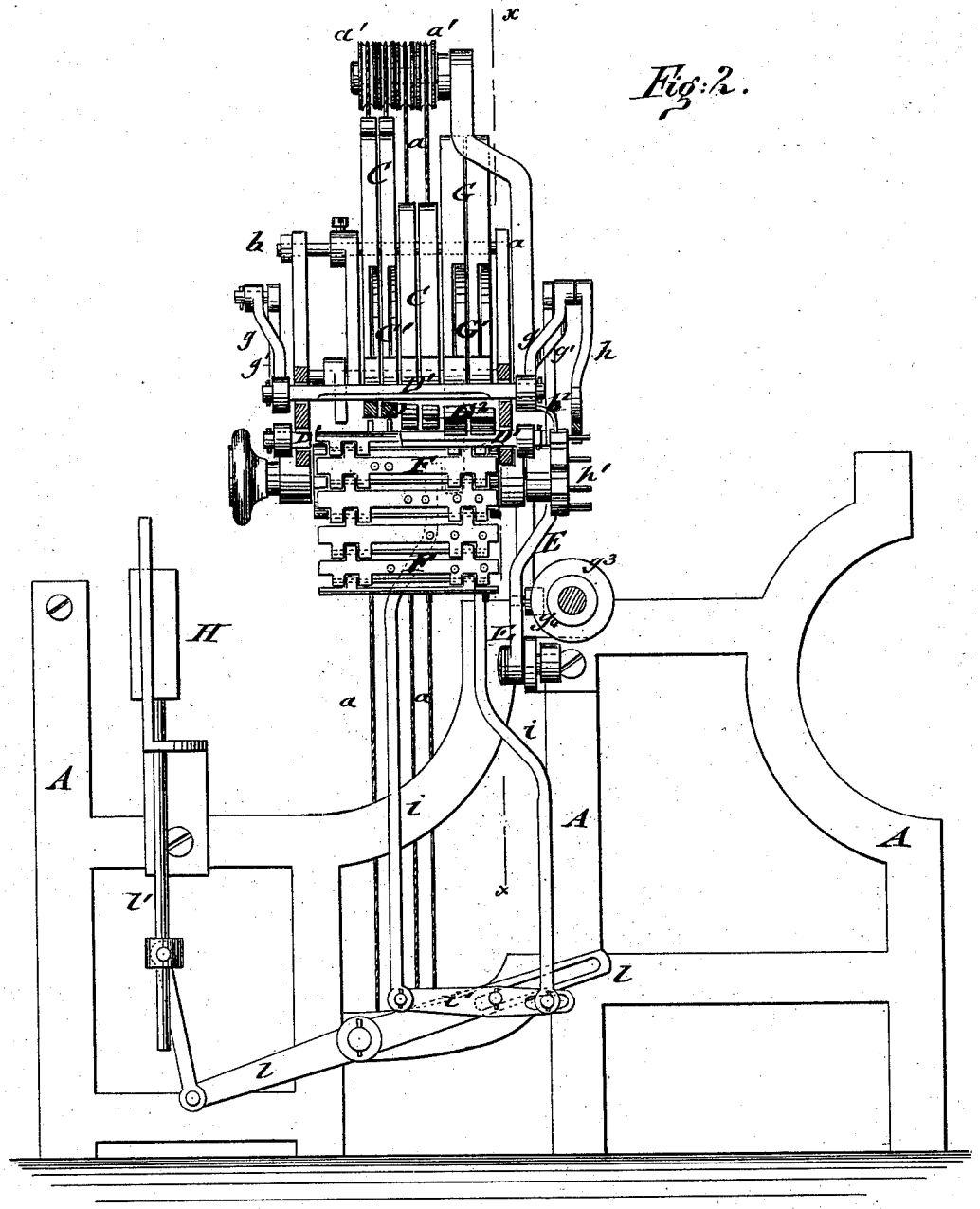
Shuttle-Box Motion for Looms.

No. 211,126. **Patented Jan. 7, 1879.**

Fig: 2.



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3 Sheets—Sheet 3.

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Shuttle-Box Motion for Looms.

No. 211,126. **Patented Jan. 7, 1879.**

Fig: 3.

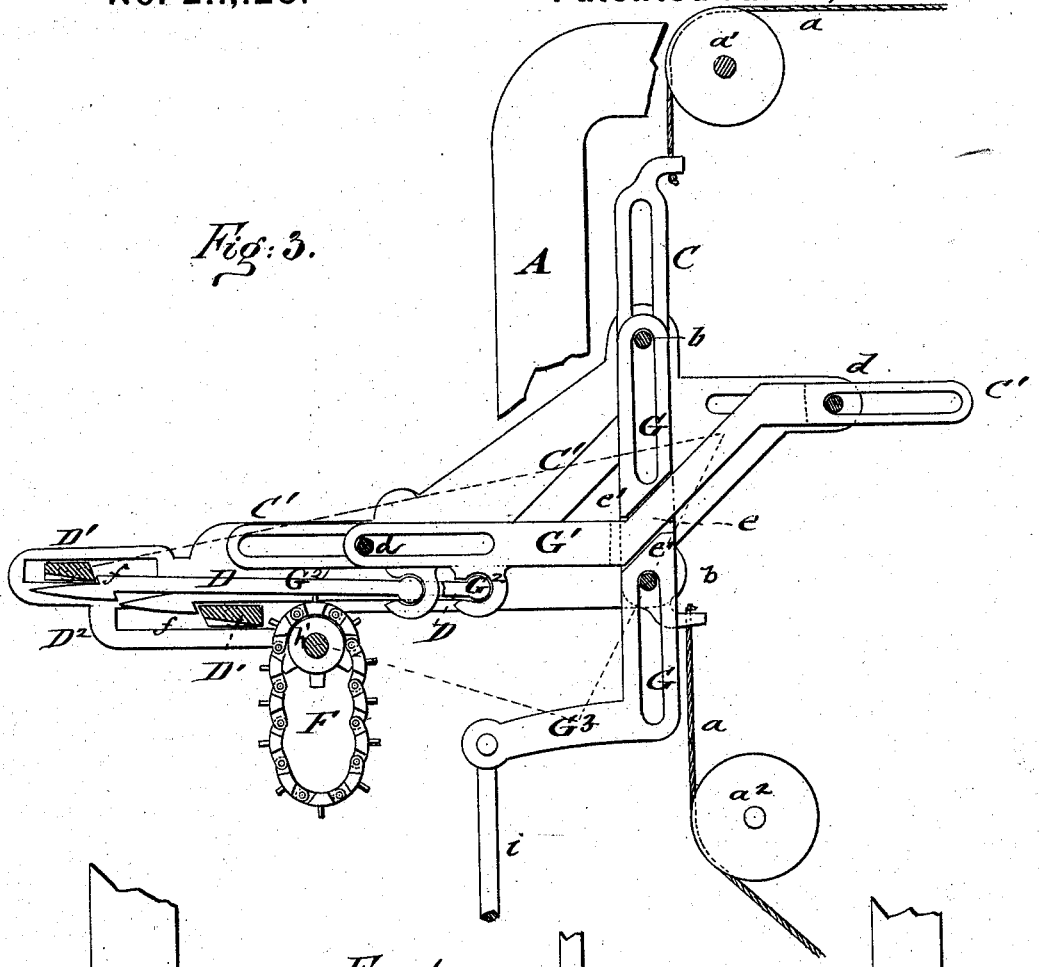
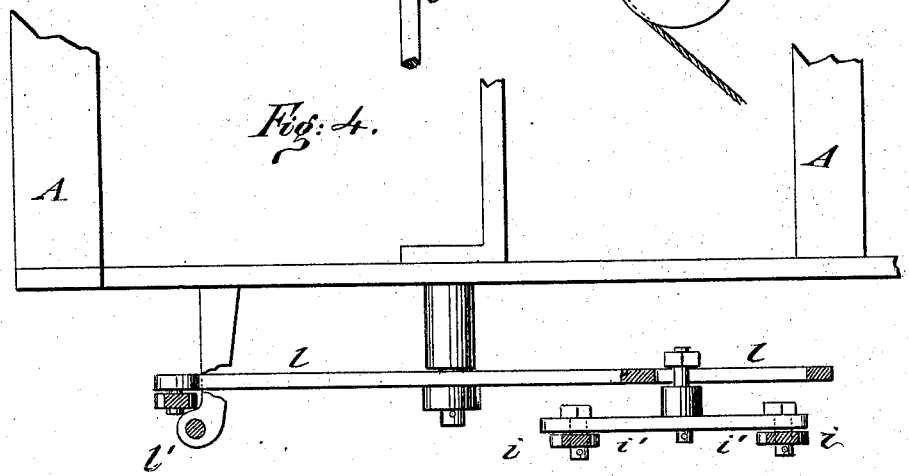


Fig: 4.



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UNITED STATES PATENT OFFICE.

JOHN BARKER, OF WHITTENTON, (TAUNTON P. O.,) MASSACHUSETTS.

IMPROVEMENT IN SHUTTLE-BOX MOTIONS FOR LOOMS.

Specification forming part of Letters Patent No. **211,126**, dated January 7, 1879; application filed March 7, 1878.

To all whom it may concern:

Be it known that I, JOHN BARKER, of Whittenton, (Taunton P. O.,) in the county of Bristol and State of Massachusetts, have invented a new and Improved Shuttle-Box Motion for Looms, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a rear elevation of my improved shuttle-box motion for looms. Fig. 2 is an end view of the same, partly in vertical transverse section. Fig. 3 is a vertical longitudinal section on line *x x*, Fig. 2, showing the box-motion on enlarged scale; and Fig. 4 is a detail top view, partly in horizontal section on line *y y*, Fig. 1, of the compound lever for transmitting the motion to the shuttle-boxes.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved box-motion for looms, that will first be described in connection with the drawing, and then pointed out in the claim.

In the drawings, A represents the loom-frame, and B the heddles. C C′ are sliding bars, the former of which are connected with the heddles by cords *a*, that pass over pulleys a^1 a^2.

In the shuttle-box motion the boxes are operated by vertically and horizontally sliding bars G G^1, the latter of which have angular middle portions, which move in correspondingly-shaped recesses in the sides of the vertical slide-bars G, and so act to raise or depress such bars, both the bars G and G^1 having slotted ends, and being guided on the pins *b d*. The sliding bars C C′ of the harness-motion correspond in shape to the bars G G^1, being also guided by the pins *b d*.

The horizontal bars G^1 are provided with jacks G^2, which are jointed thereto, and are provided at their outer ends with projections *f*, which are engaged with, in order to move the bars G^1, by the reciprocating lifter and depressor bars D′.

The vertical bars of the box-motion are provided at their lower ends with the angular arms G^3, that are connected by rods *i* to a lever, *i′*. The latter is fulcrumed at a point intermediately between the ends in the slotted end of a longer lever, *l*, which is centrally fulcrumed to the lower part of the loom-frame. The opposite end of the lower lever, *l*, is connected by a pivot-link and swiveled clamp-nut with the rod *l′* of the shuttle-boxes H, which are guided in vertical standards.

The recesses in the sides of the vertical slide-bars G, in which the angular portions of the bars G^1 move, are formed with seats *e′* at their upper and lower ends, to bear on the horizontal bars when the same have traveled the proper distance, and to lock them in position when they arrive at the end of their motion in either direction.

The sliding bars of the harness-motion are similar to those of the box-motion, there being a vertically-sliding bar and a horizontally-sliding angular one for each heddle-frame. The reciprocating lifter and depressor bars operate upon the jacks G^2 in the order determined by the pattern-chain F, which passes around the roller h^1, that is turned by means of the ratchet-wheel h^2, carried on its end, and the pawl *h*, mounted on lever g^1, and operated by means of the link g^2, and lever E, carrying a friction-roller, which plays in the groove of the wave-wheel g^3.

I dispense with springs, and secure an easy and reliable movement from the angular portion of the horizontal bars.

Having thus described all that is necessary to a full understanding of my invention, what I claim as new is—

The combination of the vertically-sliding bars G, provided with the angular arms G^3, the horizontally-sliding bars G^1, having the jacks G^2 jointed thereto, and their actuating mechanism, the lever *i′*, and connecting-rods *i*, with the end-slotted lever *l*, connected, by the pivot-link and swiveled clamp-nut, with the shuttle-box rod *l′*, as and for the purpose specified.

JOHN BARKER. [L. S.]

Witnesses:

THOMAS ELLERY,

THOMAS THORNLEY.