

JOSEPH M. STONE.
No. 121,907.

Improvement in Shuttle Box Mechanism.
Patented Dec. 12, 1871.

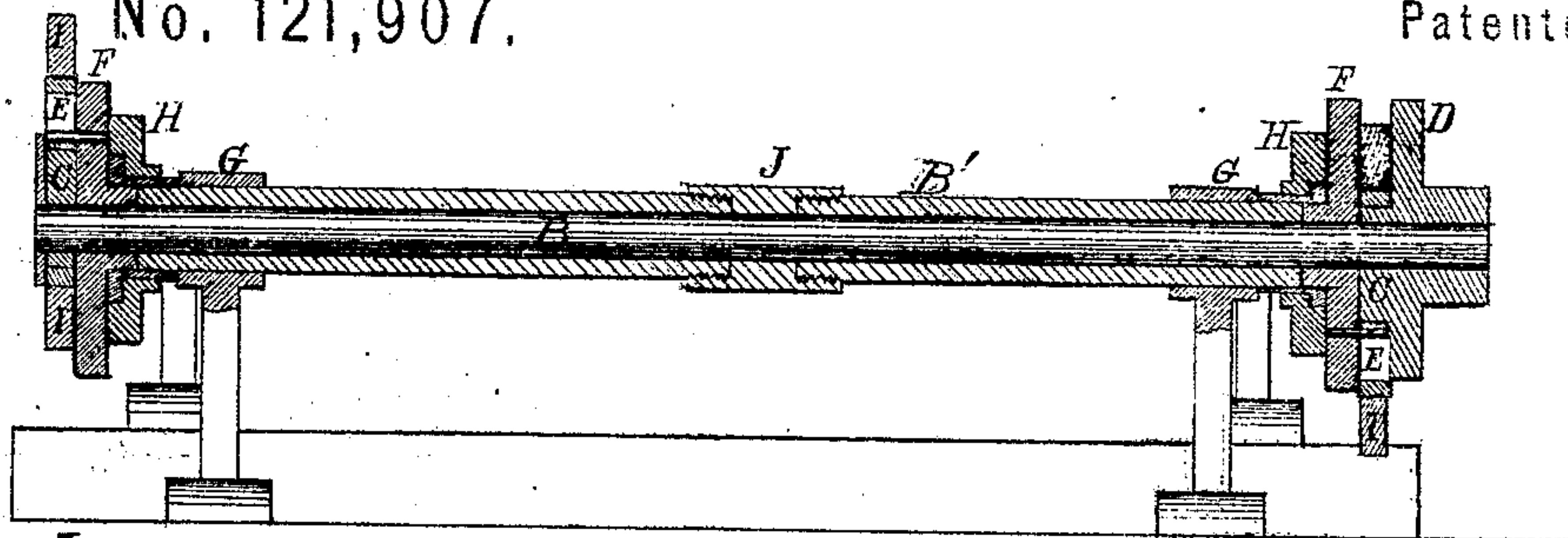


FIG. 3.

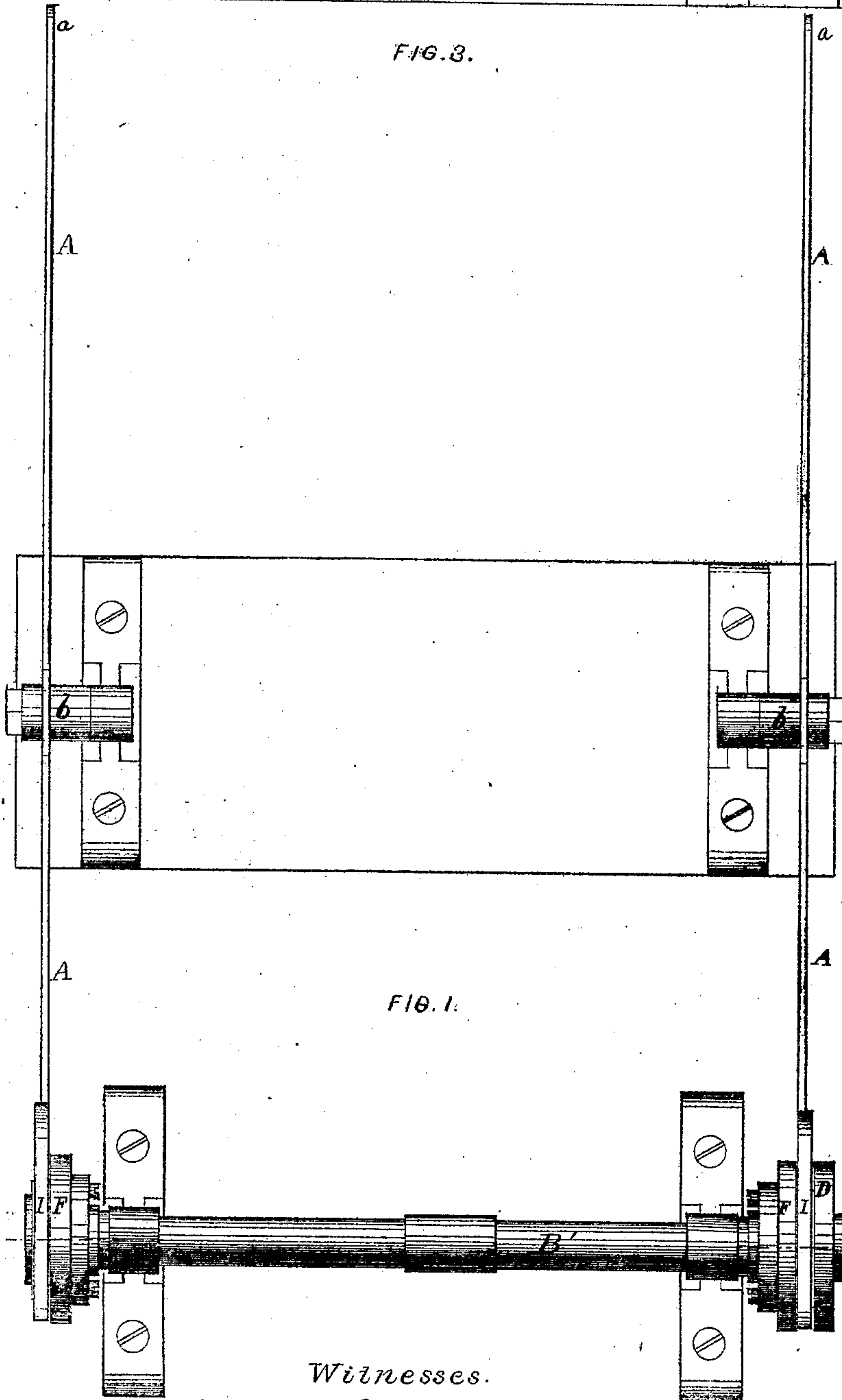


FIG. 1.

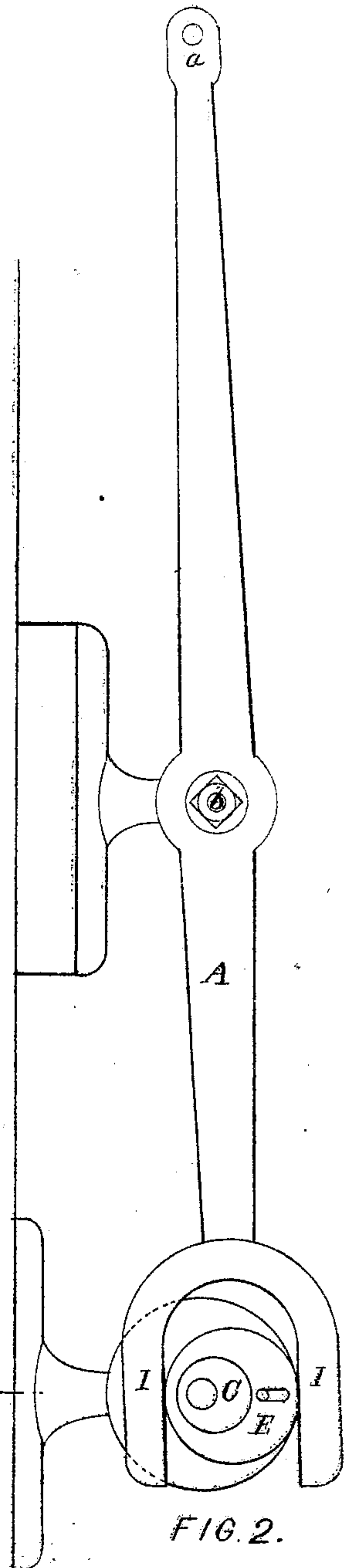


FIG. 2.

Witnesses.

E. D. Leavitt
Wm. C. Hibbard

Inventor.

Joseph M. Stone

UNITED STATES PATENT OFFICE.

JOSEPH M. STONE, OF NORTH ANDOVER, MASSACHUSETTS, ASSIGNOR TO HIMSELF, GEORGE L. DAVIS, JOHN A. WILEY, GEORGE G. DAVIS, JOSEPH H. STONE, AND JAMES H. DAVIS, OF SAME PLACE.

IMPROVEMENT IN LOOM SHUTTLE-BOX MECHANISMS.

Specification forming part of Letters Patent No. 121,907, dated December 12, 1871.

To all whom it may concern:

Be it known that I, JOSEPH M. STONE, of North Andover, in the county of Essex and State of Massachusetts, have invented certain Improvements in Mechanism for Working Shuttle-Boxes in Looms, of which the following is a specification:

My invention relates to an improved method of moving the shuttle-boxes in fancy looms, so called, to shift the shuttles by means of two eccentrics, one working in the periphery of the other, by the united and separate action of which the shuttle-boxes are raised or lowered the distance required to bring any given shuttle to the race; such, for instance, as is the subject-matter of an application for Letters Patent by John Ashworth, now before the Patent Office, and upon which my invention is an improvement.

In the application of said Ashworth the mechanisms for moving the boxes upon each side of the loom are independent of each other, so that either series of boxes can be moved without moving the other; but in the larger number of fancy looms used there is sufficient capacity of change, if two eccentrics upon each side of the loom are used and are connected with those upon the opposite side, so that the two series of boxes will be moved simultaneously in opposite directions by one set of operating mechanism, by which the mechanism is much simplified and the two series of boxes are made to counterpoise each other. My invention consists in the first place in the combination of the eccentrics upon one side of the loom with the corresponding eccentrics upon the opposite side by two concentric shafts, one working within the other, as will be described. My invention consists in the second place in constructing the levers which work the shuttle-boxes with a broad fork or slot, with parallel sides, at the ends, which receive the action of the eccentrics, in which the outermost eccentrics work, which thus impart the reciprocating motion to the levers without any intermediate device.

In the drawing, Figure 1 is a plan of my improvement. Fig. 2 is a side elevation, and Fig. 3 is a vertical sectional elevation through the center of the eccentric shafts.

The other parts of the loom and the devices by which the eccentrics are operated are omit-

ted, as they are not embraced within this invention.

A A are the shuttle-box levers, the ends *a* of which are connected with the shuttle-boxes in the usual manner, and oscillate upon a fulcrum at *b*. B B' are the eccentric shafts. To the inner shaft B the inner eccentrics C C are attached at each side of the loom. This shaft is worked by the index-plate, D, which is fixed upon it, a half revolution at a time, in a manner similar to that shown by Ashworth's application.

The drawing is not intended to represent the construction of the said index or driving-plates fully, but only their position and relation to the eccentrics.

E E are the outer eccentrics, which are revolved upon the periphery of the inner eccentrics by the index or driving-plates F F, which are fixed upon the tubular shaft B' which incloses the shaft B. This shaft is shown as being made in two parts and connected in the middle by a coupling, J, which may be made to form a central-bearing for the inner shaft, while the intermediate portions of the inner shaft between this and the outer bearings may be left with a free space around it; and in broad looms I employ a fixed bearing at this place in connection with the other bearings G G, to prevent the shafts from springing. H H are collars attached to the shaft B' for securing the index-plates F to the shaft and adjusting them to the proper position. I I are the branches of the lever A, between which the outer eccentric works to oscillate the lever. Their inner faces are made true and parallel and at a distance apart equal to the diameter of the outer eccentric.

What I claim is—

1. The combination of the two eccentrics upon one side of the loom with the corresponding eccentrics upon the opposite side by means of the two concentric shafts, substantially as described.
2. In combination with the eccentrics the shuttle-box levers, formed with forked or slotted ends that embrace the outer eccentrics, substantially as described.

Executed July 27, 1871.

Witnesses: JOSEPH M. STONE.

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