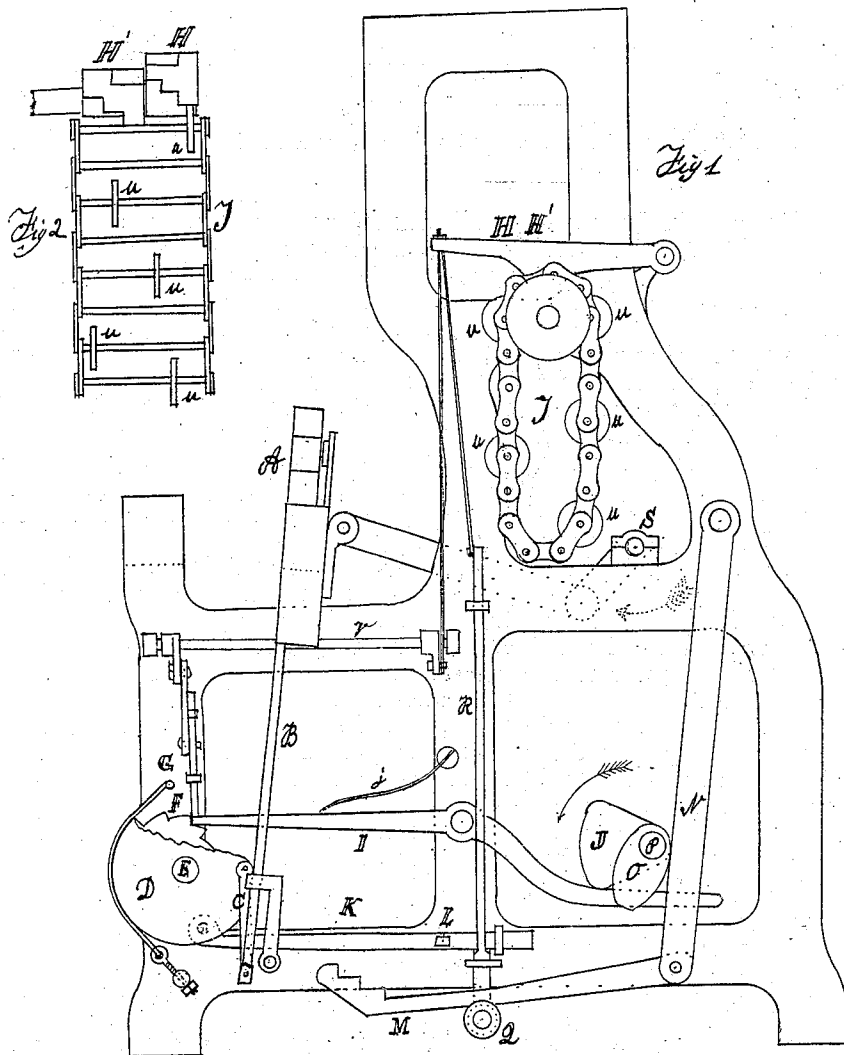


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Improvement in Shuttle-Box Actuating Mechanism.

No. 127,841.

Patented June 11, 1872.



Witnesses
 Luke Botts
 Sam^l Jones

James Briarly } Inventors,
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UNITED STATES PATENT OFFICE.

JAMES BRIERLY, OF WORCESTER, AND JAMES BRIERLY, OF MILLBURY,
MASSACHUSETTS.

IMPROVEMENT IN SHUTTLE-BOX-ACTUATING MECHANISMS.

Specification forming part of Letters Patent No. 127,841, dated June 11, 1872.

Specification describing certain Improvements in Looms, invented by JAMES BRIERLY, of Worcester, and JAMES BRIERLY, of Millbury, in the county of Worcester and State of Massachusetts.

Our invention relates to the changing of the shuttle-boxes for the purpose of changing the shuttles while the loom is in motion, and is designed to enable the loom to weave any pattern desired—or, in other words, to “call any shuttle at will.”

The accompanying drawing shows our invention applied to a loom, some parts of the loom not connected with our invention being omitted.

Figure 1 is a side view. Fig. 2 is a front view of the pattern-chain and the step-levers, the same parts being indicated by the same letters where they occur in both.

A is the series of shuttle-boxes. B, the rod for moving them, connected by pitman C to the rocking plate D, which turns on a stud, E, and has a series of steps or notches, F, corresponding to the number of boxes to be raised. G is a drop-slide or stop holding by the notches F, and operated by the lever H, governed by the pattern-chain G, having suitable connections through the rod V to the lever H. I is a retaining-lever, one end holding by the notches F and the other operated by the cam J, and has a spring, *j*, to keep it in place. K is a slide connected to the plate D, and having a catch, L, against which the notches on the connection M hold to move D and raise the boxes. The connection M is operated by the lever or arm N, which receives motion from the cam O at each turn of the shaft P, which is geared to the crank-shaft S to run one-half its speed. The notched end of M is supported by a roll, Q, on which it slides, the roll being attached to the rod R, which is connected to and operated by the lever H', governed by the pattern-chain, the notches on M agreeing with those on D, and so arranged that each one, when acting on the catch L, shall raise a corresponding box into position. The pattern-chain T is driven in the

usual manner, from a crank or its equivalent, on shaft P, the chain being made with rods carrying small rolls *u u u*, which raise the levers H H', whose bearing-surfaces are notched or stepped to correspond to those on D and M, and so constructed that the rolls raise the levers various degrees, according to the notch or step they are under, their position sidewise on the chain being determined by the pattern it is desired to weave and the box desired to be brought into place. The other parts of the loom may be of the common form and construction.

The operation is as follows: A roll on the pattern-chain raising the lever H' raises Q and M, whose corresponding notch engages the catch L, and through D raises the corresponding box to position, the cam O being set so as to raise the boxes while the shuttles are in them, the slide G dropping by its weight into the notches, and holding until it is raised by the lever H, and then the lever I holds until released by its cam, which is set to drop the boxes at the proper time. Thus the boxes are raised, one, two, or more at a time, and lowered or dropped by their weight, as may be indicated by the pattern-chain, the position of the rolls on it determining the action of both, and enabling it to change from any one shuttle to any other, or “call any box at will.”

By substituting a rack and pinion for the rod B, and a spring or weight to draw it down, the same mechanisms may be used to operate or change what are known as “revolving boxes;” or they may be driven each way by duplicating the raising mechanism described, and the dropping parts be omitted.

The under surfaces of the levers H and H' may be simply inclined so as to give the different degrees of motion.

We claim—

1. The levers H and H' with their under surfaces adapted, as described, to enable the rolls of the pattern-chain to raise them different degrees, according to the position of said rolls sidewise on said chain.

2. The rocking plate D with its notches F, and connections C and K, substantially as described.

3. The lever I, in combination with the slide G and notched disk or rocking plate D and its cam J, substantially as described.

4. The stop-slide G, in connection with a lever operated by the pattern-chain, and act-

ing or holding by the notches on the notched disk D.

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