J. Brierly,

Shuttle Motion.

No. 80,385. Patented Jul. 28, 1868.

Fig. 5.

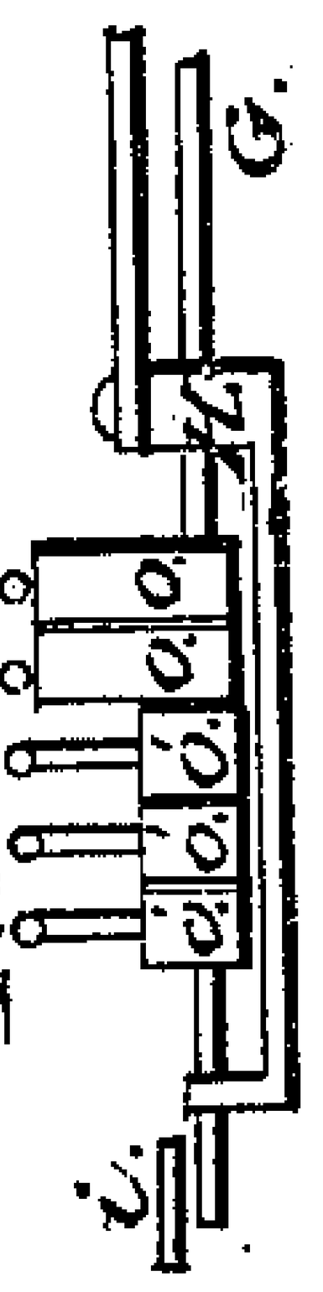


Fig. 4.

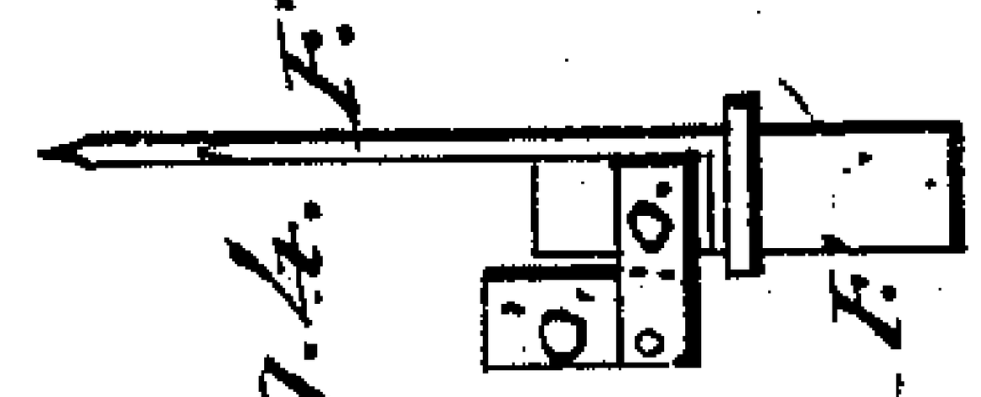


Fig. 1.

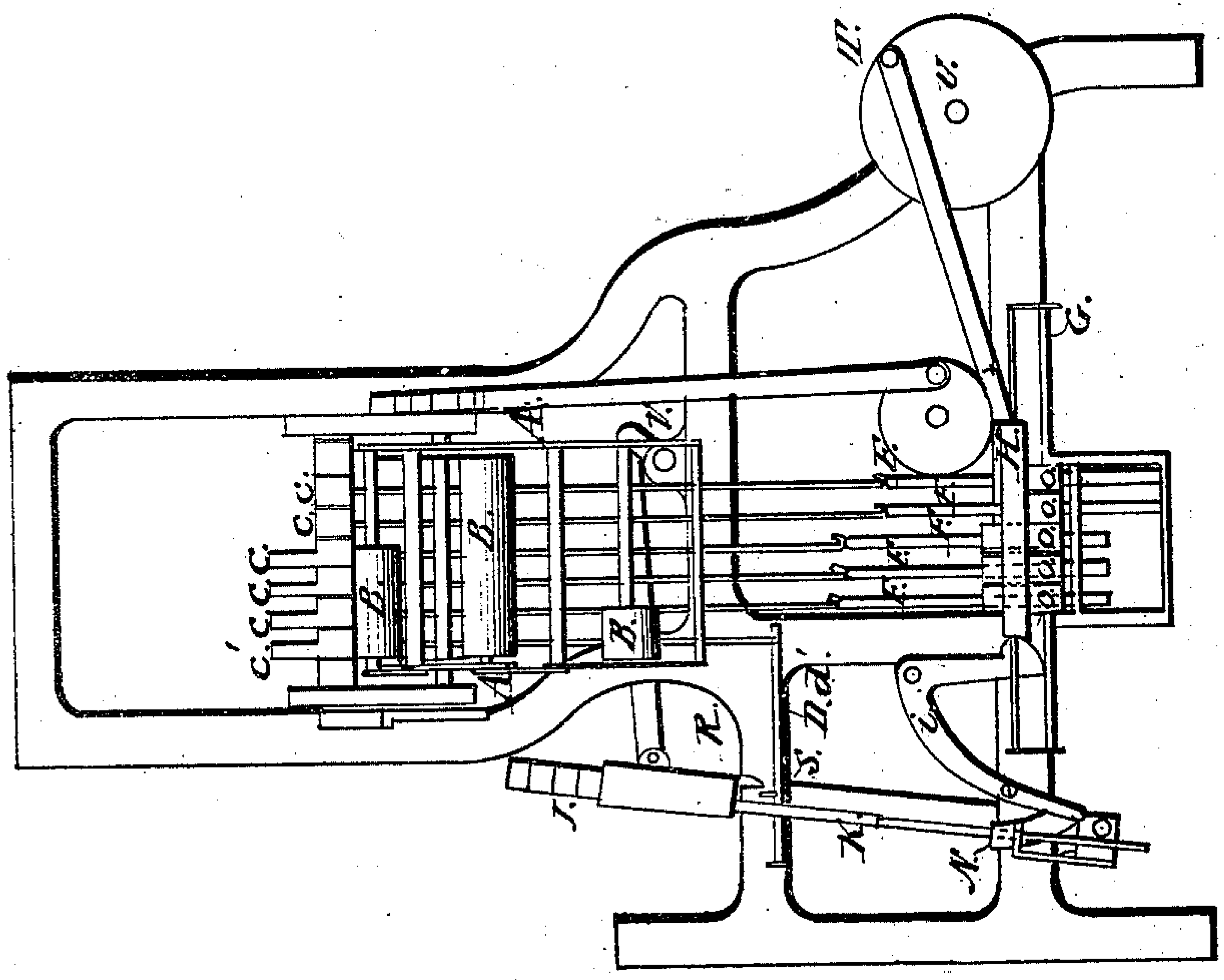


Fig. 2.

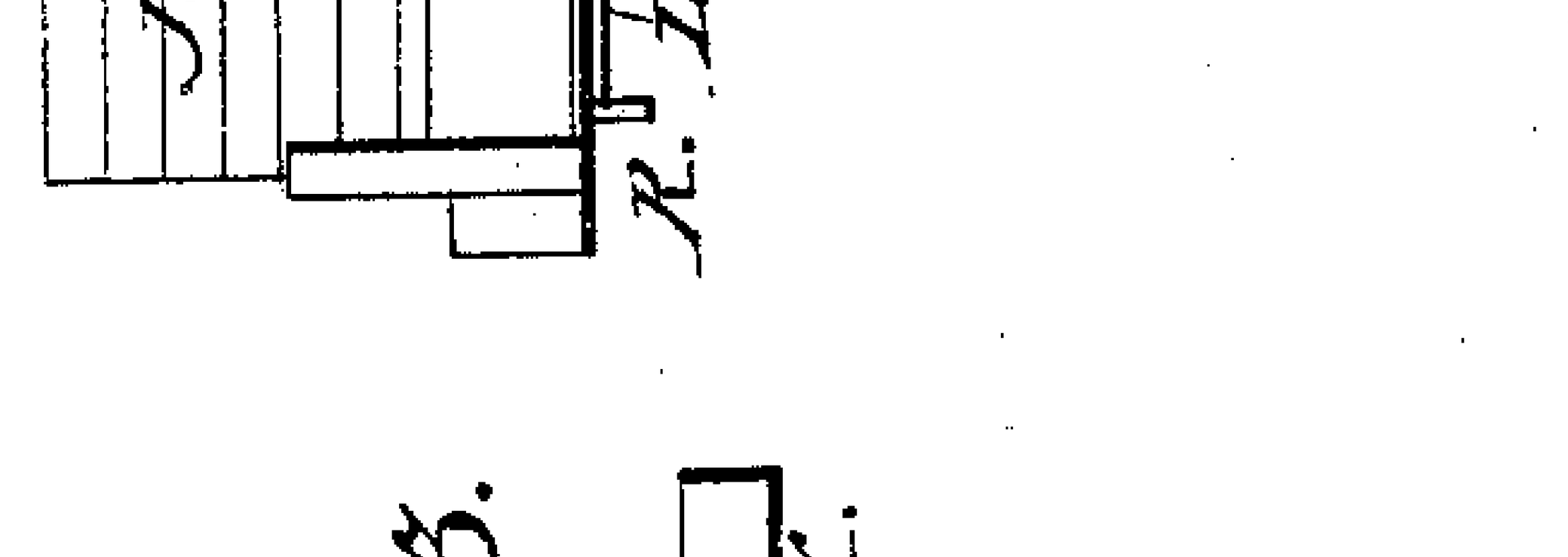
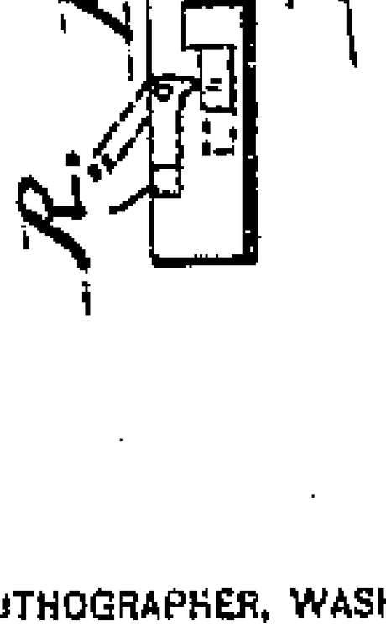


Fig. 3.



Witnesses:

F. C. Thayer,

C. M. Miles

Inventor:

James Brierly

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

United States Patent Office.

JAMES BRIERLY, OF WORCESTER, ASSIGNOR TO HIMSELF AND JAMES BRIERLY, OF MILLBURY, MASSACHUSETTS.

Letters Patent No. 80,385, *dated July* 28, 1868.

IMPROVEMENT IN OPERATING SHUTTLE-BOXES 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, JAMES BRIERLY, of the city and county of Worcester, State of Massachusetts, have invented a new and useful Improvement in Operating the Shuttle-Boxes of Looms; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a view of my invention, applied to a loom with movable shuttle-boxes.

Figure 2 shows a front view of the boxes, and the means of holding them when raised

Figure 3 shows details of the let-off or dropping-apparatus.

Figure 4 shows a back view of the lifters and slides.

Figure 5 shows a plan of the same with the carrier—

The same letters indicating the same parts wherever they occur.

My invention relates to the changing of the shuttle-boxes of looms, in which more than one is used, and is designed to give complete control of them by the pattern-chain, and change from any one to any other one of the boxes that is desired.

In constructing my invention, I make use of a pattern-chain, A, with its rolls, B B B, to lift the levers C′ C C C C C, somewhat in the common way. One of these levers, C′, is connected to the dropping-apparatus or let-off D of the shuttle-boxes, and the others are connected to the lifters F F F F F, which correspond in number to the number of shuttle-boxes used, less one.

O′ O′ O′ O O are slides or blocks, sliding and turning on the bar G, when turned or lifted by the lifters into the position shown at O′ O′ O′, and are then moved by the carrier H, which moves them along the bar G, and makes them move the lever I to gauge the position of the boxes.

J J are the boxes, of which I have shown six, which are supported by the spring-catch L in the notches on rod K, the lower part of which has a collar, N, sliding up to a shoulder at *n*, and is connected to lever I.

To the spring-catch L, I connect a lever, P, having a pendant-trip, R, hung to turn one way, and to work the lever L when moved the other, and place the tripping-shaft D with its arm, *d*, attached to a lever, operated by the chain and its arm, S, in such position that when raised it shall stand in the way of the pendant R, and operate it.

The carrier H receives its motion from a crank, T, on the shaft U, and is so placed as to move freely over the slides O′ O′ O′ O O, when they are not lifted, and when lifted they are carried forward and returned to place by it, the shaft U having the same motion as the crank-shaft V.

The other parts of the loom may be of almost any common form or construction used for the various kinds of weaving wherein more than one shuttle is used. The slight variations of such parts as need any change to apply my invention to them, will appear to those skilled in making such looms without further invention, and therefore it is thought unnecessary to describe them more fully.

The operation is as follows:

The chain A being arranged with the desired changes, it gives motion to the levers C C C C C, which raise the lifters F F F F F, elevating the slides O′ O′ O′ O O, and the carrier H, in going forward, moves them along the rod G, operating the lever I, raising the boxes J the proper or required distance at or near the time of beating up, after which the carrier returns the slides O′ O′ O′ O O, which, unless held up, fall into place, and the carrier passes freely over them.

The cast-off lever C′, when raised, brings up the arm S in the path of the pendant R, and, as the lay moves back, the pendant turns, and passes the arm without moving the lever, but on beating up, it catches the arm and moves the lever P, releasing the catch L, and allowing the boxes to drop to the position indicated by the number of slides held forward by the carrier, the end of the lever I resting against the forward slide, or if the slides are all down, the boxes fall to the upper or first box, and then if three slides are raised, as shown in fig.

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1, the carrier, at its next movement, will move the lever I and raise the boxes three higher, bringing the fourth into position; thus the number of slides raised determines the change, and these being governed by the chain enables me to make any change desired.

It is evident that the parts composing my box-motion can be made of such size as to apply to the same end of the loom as the harness-motion to either end or to both ends, by simply duplicating the parts and connecting them together by suitable connections not requiring a description. If desired, the boxes of both ends may be moved by one pattern-mechanism, and the slides may be arranged with springs or levers to insure their falling to place, if thought best, and other variations made without departing from the principles of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of slides O, controlled by pattern-mechanism, with a carrier, as and for the purposes set forth.

2. The combination of the lifters, slides O′ O, and carrier H, for operating the boxes, substantially as described.

3. The combination of a sliding spring-catch, L, pendant R, and notched box-rod K, substantially as set forth.

4. The combination of the cast-off lever P, having a pendant, R, with the tripping-arm S, and its operative mechanism, substantially as described.

5. The combination of the cast-off and raising-apparatus, consisting of the lifters, slides, carrier, and their connections, as described, whereby I can change the boxes at will, on one or both ends of the loom, substantially as set forth.

JAMES BRIERLY.

Witnesses:

C. M. MILES,

F. C. THAYER.