

(No Model.)

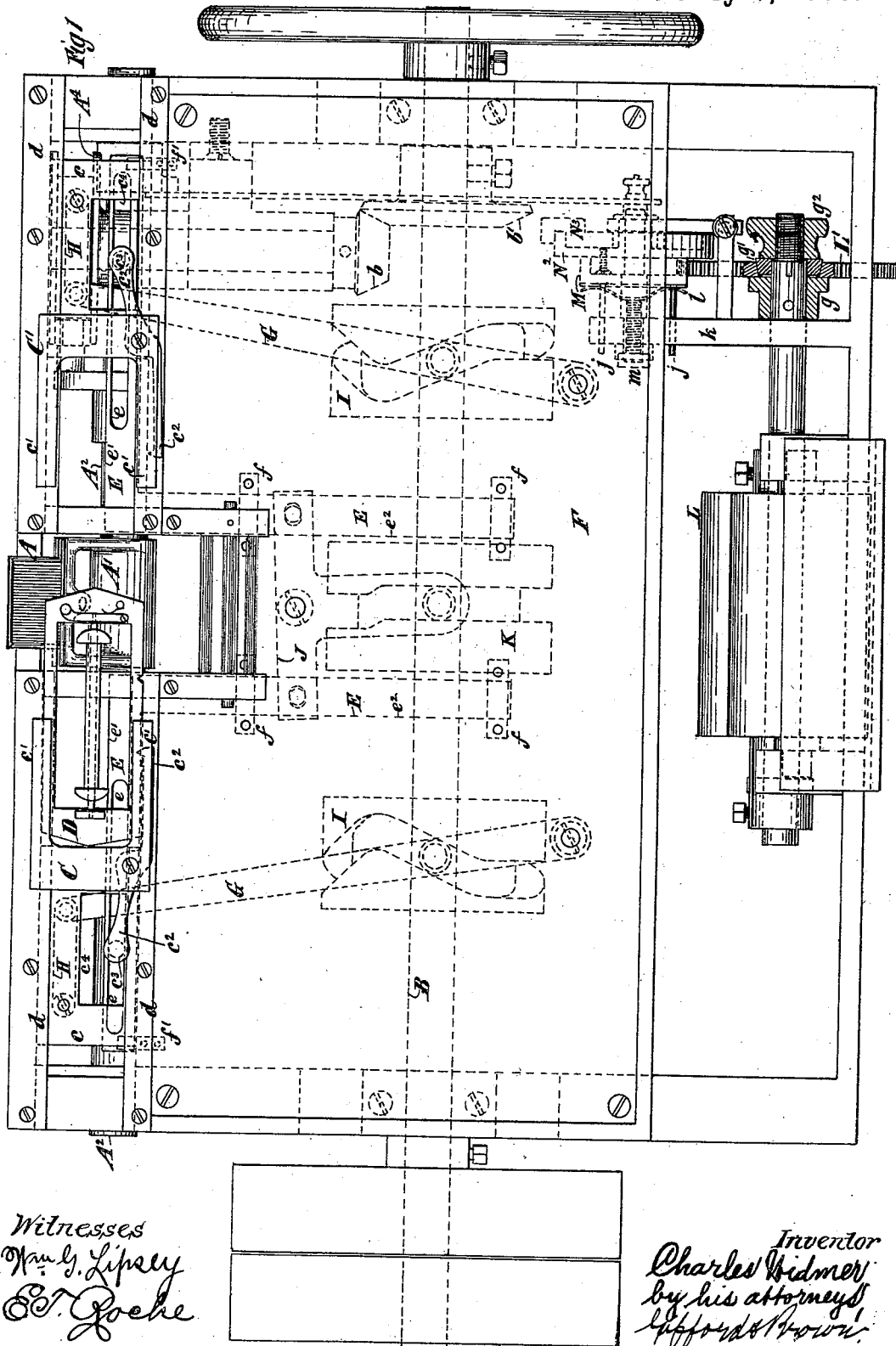
2 Sheets—Sheet 1.

C. WIDMER.

SHUTTLE MOTION FOR LOOMS.

No. 345,011.

Patented July 6, 1886.



Witnesses
Nancy Lipsey
E. Goche

Inventor
Charles Widmer
by his attorneys
Lippard & Brown.

(No Model.)

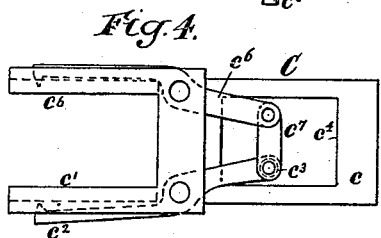
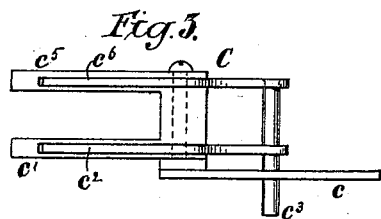
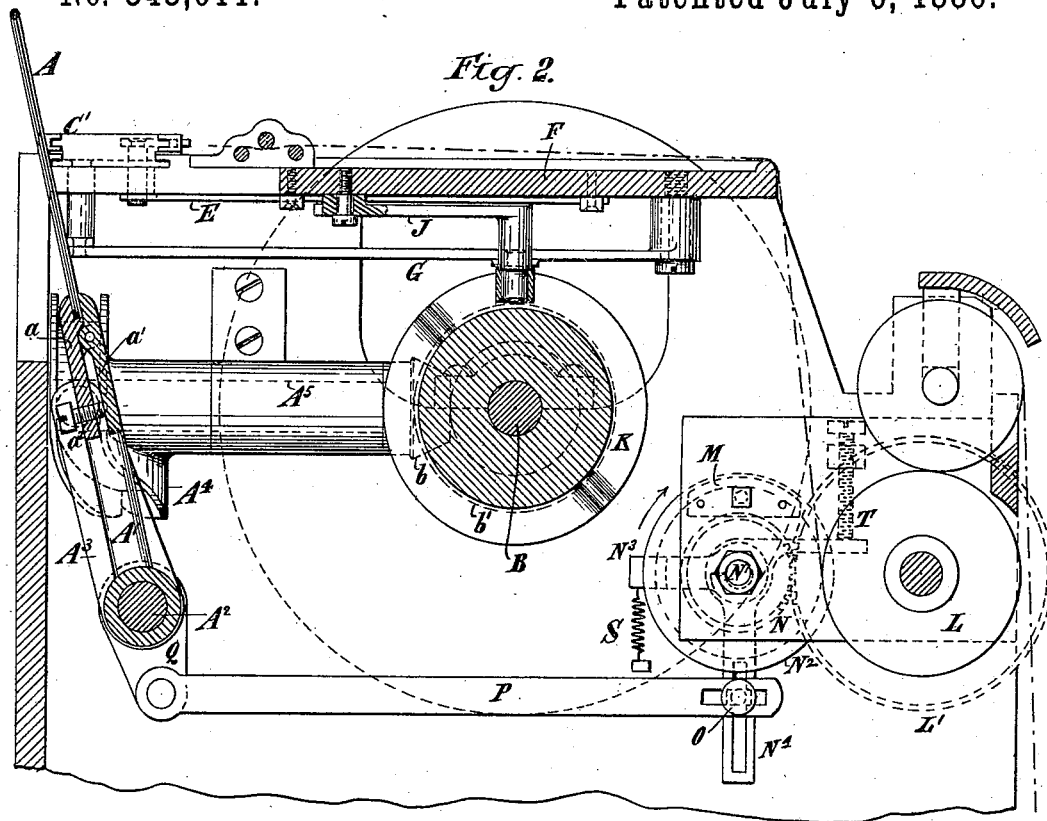
2 Sheets—Sheet 2.

C. WIDMER.

SHUTTLE MOTION FOR LOOMS.

No. 345,011.

Patented July 6, 1886.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

CHARLES WIDMER, OF NEW YORK, N. Y.

SHUTTLE-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 345,011, dated July 6, 1886.

Application filed March 23, 1885. Serial No. 159,884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WIDMER, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Shuttle-Motions for Looms, of which the following is a specification.

I will describe a loom embodying my improvement, and then point out the improvement in my claim.

In the accompanying drawings, Figure 1 is a plan or top view of parts of a loom embodying my improvement, certain parts being shown in section. Fig. 2 is a central transverse section of the same. Fig. 3 is a side view of a shuttle gripper and carrier, illustrating a modification. Fig. 4 is a plan of a shuttle gripper and carrier illustrating another modification.

Similar letters of reference designate corresponding parts in all the figures.

C C' designate shuttle grippers and carriers, and D designates a shuttle. Each of the shuttle grippers and carriers consists of a slide-piece, *c*, that works in guides *d*, extending widthwise of the loom, and a pair of gripper-jaws, *c'*, elevated above the slide-piece and having grooves adapted to receive the shuttle. One of each pair of gripper-jaws has fulcrumed to it a gripper-lever, *c''*. This lever is fulcrumed between the ends. One end is provided with a hook or spur, and extends into one of the grooves. The other end is furnished with a rod, *c'''*, that extends down through an opening, *c'''*, in the slide-piece *c* of the gripper and carrier to which it belongs, and into a slot, *e*, that extends widthwise of the loom, in a gripper-lever operator, E.

It will be observed that the gripper jaws or arms of the shuttle grippers and carriers extend almost wholly beyond the slide-pieces *c* thereof. This is advantageous, as the oiled parts of the shuttle grippers and carriers are thereby prevented from passing into the sheds. I can use a steel or other metal shuttle without requiring to oil it. Each gripper-lever operator consists of an L-shaped piece, one limb, *e'*, of which extends widthwise of the loom and is provided with the slot *e*, and the other limb of which, *e''*, extends fore and aft of the loom. The limbs *e''* of the gripper-lever operators E work in guides *f*, attached to the under side of

a table or platform, F, forming part of the loom-frame. The limbs *e'* are also supported in guides *f'*.

G designates levers fulcrumed at one end to the table or platform F, and connected at the other end by links H to the slide-pieces *c* of the shuttle grippers and carriers C C'. Between their ends these levers G are provided with bowls or rollers, which enter grooves in the circumferences of cams I, that are affixed to the shaft B. The grooves of the cams I are of such configuration that they will vibrate the levers G and effect the reciprocation of the shuttle grippers and carriers to and fro twice in each rotation which is made by the cams. These cams are reversed so that the shuttle grippers and carriers will be moved in the same directions, one toward the reed while the other recedes from it, and conversely. There are straight portions of the grooves which provide for dwells.

The two gripper-lever operators E are connected to a T-shaped lever, J, which is fulcrumed to the under side of the table or platform F, and has its two cross-arms pivotally connected to the gripper-lever operators E, and its other arm provided with a bowl or roller working in a circumferential groove in a cam, K, affixed to the shaft B. The groove of the cam K is such that at the proper times it will rock the lever J; so that the gripper-lever *c''* of one of the shuttle grippers and carriers will be caused to release the shuttle, and that of the other shuttle gripper and carrier will be caused to grip the shuttle.

The shuttle will be delivered first from one shuttle gripper and carrier into the other, and so on.

Two shuttles may be employed, if the shuttle grippers and carriers are severally provided with a second pair of arms, *c''*, and one of these arms has fulcrumed to it a gripper-lever, *c'''*, as shown in Figs. 3 and 4. In Fig. 4 the gripper-lever *c'''* is shown as fulcrumed upon that one of the arms which is toward the rear of the loom, and is above and to the rear of the arm *c''*, and in Fig. 3 said lever is shown as fulcrumed upon that one of the arms which is toward the front of the loom, and is above and parallel with the arm *c''*.

The gripper-lever *c'''* may be connected by a

link, c' , with the rod c^2 , as shown more clearly in Fig. 4. When the second gripper-lever, c^2 , is thus operated, the shuttle in conjunction with which it operates will be impelled in the reverse direction to the other shuttle. This will be advantageous, because the mechanism whereby the gripper-levers are operated will be better counterbalanced in its action than otherwise would be possible. If, however, the shuttles are to be impelled in the same direction at the same time, the said gripper-lever c^2 may be arranged above and parallel with the others, and connected directly to the rods c^2 , as shown in Fig. 3.

I have shown a reed and lay operating mechanism comprising no part of my present invention, a brief description of which is as follows: A designates a reed mounted on a frame, A, upon a rock-shaft, A^2 . Jaws $a a'$, adjusted by a screw, a^2 , grasp the reed. An arm, A^3 , on the rock-shaft enters a groove in a cam, A^4 ,

on a shaft, A^5 , deriving motion by means of a pinion, b , and gear-wheel b^3 , from shaft B.

I do not herein lay claim to the take-up mechanism shown, as I have made the same the subject of a separate application for Letters Patent, Serial No. 183,709, filed November 23, 1885.

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

The combination, with shuttle grippers and carriers C C', having gripper arms or jaws c' , of levers G, for reciprocating the shuttle grippers and carriers, cams I, for actuating these levers G, gripper-levers c^2 , gripper-lever operators E, a lever, J, and a cam, K, substantially as specified.

CHAS. WIDMER.

Witnesses:

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