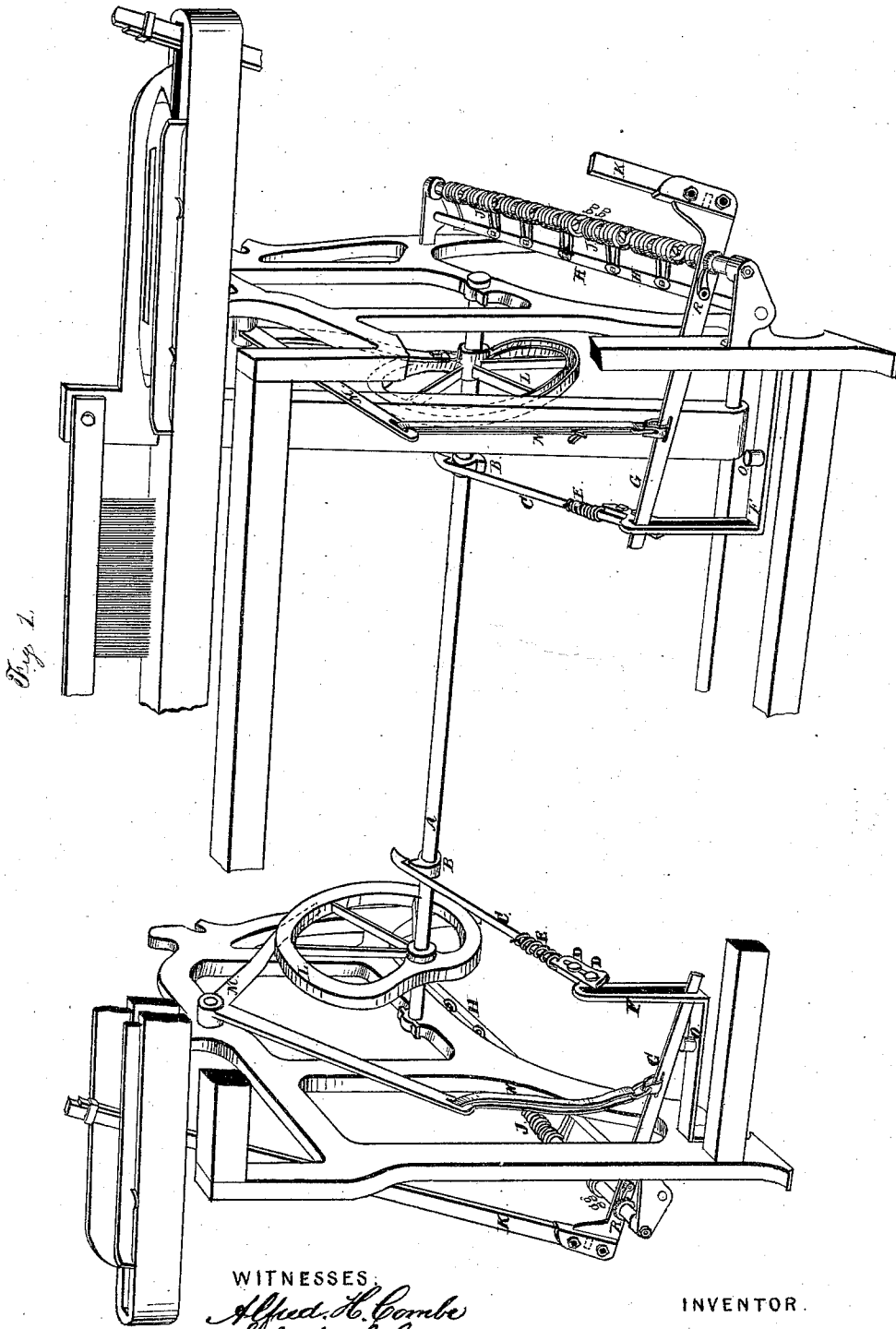


L. E. ROSS.

Loom-Picking Mechanisms.

No. 143,257.

Patented September 30, 1873.



WITNESSES:

Alfred H. Combe
Oliver C. Mowry

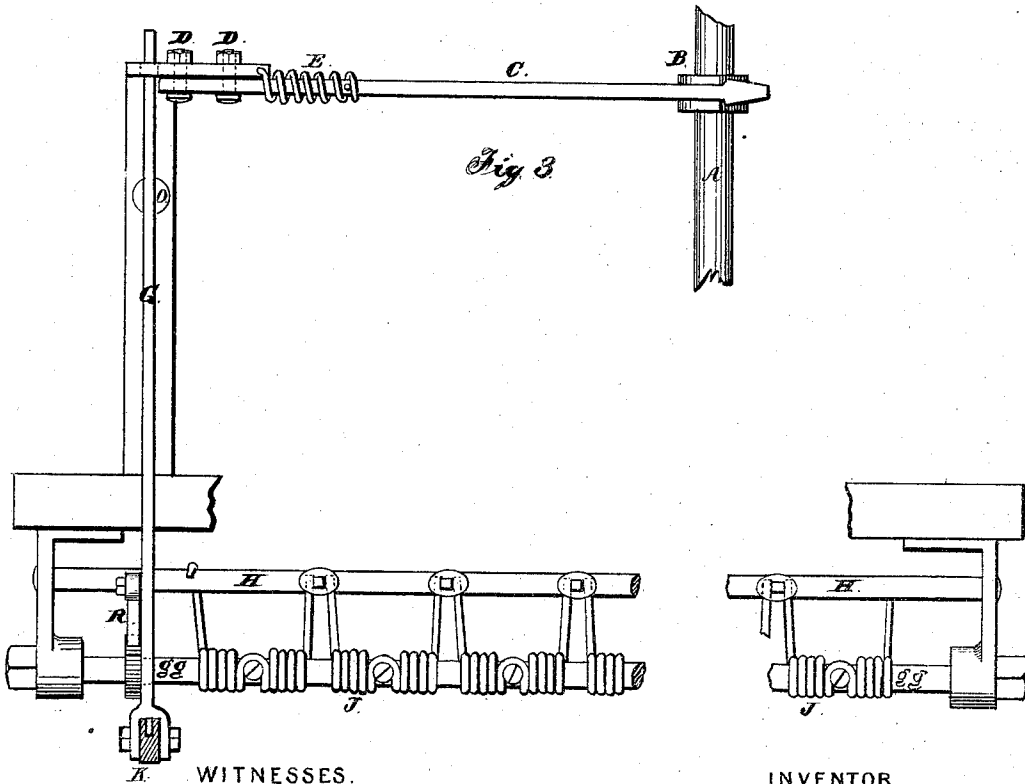
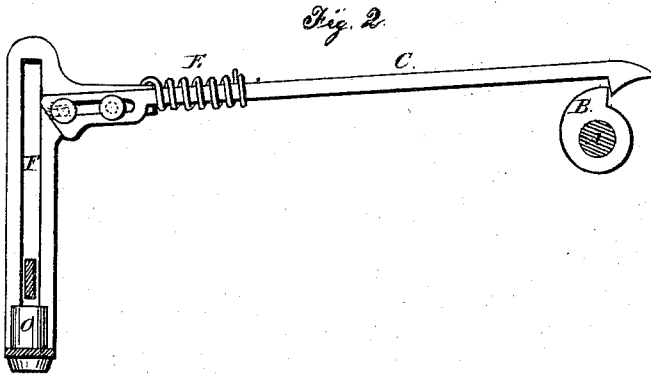
INVENTOR.

Lester E. Ross

L. E. ROSS.
Loom-Picking Mechanisms.

No. 143,257.

Patented September 30, 1873.



WITNESSES.

Alfred L. Conkle.
Elisha C. Mowry

INVENTOR.

Lester E. Ross.

UNITED STATES PATENT OFFICE.

LESTER E. ROSS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF THREE-FOURTHS HIS RIGHT TO ELISHA C. MOWRY, OF SAME PLACE, AND JOHN ENOCH AND DAVID B. ALLEN, OF WEST LIBERTY, OHIO.

IMPROVEMENT IN LOOM PICKING MECHANISMS.

Specification forming part of Letters Patent No. **143,257**, dated September 30, 1873; application filed April 21, 1873.

To all whom it may concern:

Be it known that I, LESTER E. ROSS, of the city of Providence, county of Providence, State of Rhode Island, have invented certain Improvements in Looms, of which the following is a specification:

This invention relates to that class of shuttle-machines in which the shuttle is thrown by an independent power, so that its movement is not affected by the varying speed of the loom; and consists mainly in the combination of a shaft, a series of springs, and a brace-rod, with certain other parts, as will be fully described hereinafter.

Figure 1 of the accompanying drawings represents a perspective view of a loom with my spring-shuttle motion attached, showing only such other parts of the loom as are necessary to make the operation of the shuttle-motion clearly understood. Fig. 2 shows a side view of the latching device, supporting-brace, and cam for withdrawing the latch, when viewed from the end of the loom. Fig. 3 shows a top view of the tripping-cam, latch, supporting-brace, lifting-lever, together with the shaft, ratchet, springs, and rod or brace.

The right-hand side of Fig. 1 shows the springs as strained up, and the picker-stick thrown back ready for the stroke, with the lifting-lever held up by the latch; while on the left-hand side the springs are shown as relaxed, and the picker-stick thrown forward, as they would appear immediately after the shuttle had been thrown from left to right. A is the cam-shaft of the loom, to which motion is communicated through a set of gears from the crank-shaft, neither the gear nor crank-shaft being shown. B B are small cams, which being set on opposite sides of the shaft, alternately draw back the latch-levers C C. D D are bolts that hold the latch-levers in place, and work in slots which allow the latch-levers to be operated backward by the cams B B, and forward by springs E E. F F are the supporting-braces; G G, the levers which convey the picking-sticks. H H are the rods

to which are attached the ends of the springs J J J, which operate the shaft *g g*; K K, the picker-sticks; L L, the heart-shaped cams; M M, the bell-crank levers; N N, straps or other flexible connections; O O, rubber bunters. R R are the ratchets, by means of which any desired amount of power can be put into the springs, and retained there by the pawl and lever G.

The operation of the loom is as follows: The heart-shaped cam L is constructed with a groove in the side near its outer rim, in which a friction-roller travels, attached to the lower end of the perpendicular arm of the bell-crank lever M. By means of cam L and the lever M the lever G through the flexible connection N is raised, and in its upward movement pushes back the latch C, which is immediately returned by the springs E, and holds up the lever G above the latch. As cam L continues to revolve the bell-crank lever recedes, and the whole force of the springs J J comes upon the latch, the rising of the lever G having caused the shaft *g g* to make part of a revolution backward, which puts the tension on all the springs attached to the shaft. This backward motion of the shaft also throws the picker-stick K back, as shown, on the right-hand side of Fig. 1 of drawings, ready for the forward blow. At the proper time—*i. e.*, when the warp is opened by the harnesses, and the slay-beam is in the right position, the latch is withdrawn by the cam B—and the shuttle is driven through the warp by the recoil of the springs, causing the shaft to rotate quickly and actuate the picker-stick K. This action is repeated alternately at each end of the loom, and the shuttle is thrown with uniform speed, whether the loom is run slow or fast. After driving the shuttle the momentum of the lever G is checked by the bunter O, which is a rubber plug inserted in a cavity or socket in the support F. The tension of the springs may be increased or diminished by means of the ratchet R, which is fastened to the shaft *g g* and the pawl attached

to the lever G. By means of this device the lever G retains its relative position whatever may be the tension of the springs.

I do not claim as new the use of a spring for driving the shuttle; but

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

1. The ratchet and pawl R, in combination with the springs J J, shaft *g g*, and lever G, with the supporting-rod H, substantially as and for the purposes specified.

2. The latch-lever C, cam B, and support F,

in combination with the lever G, picker-stick K, shaft *g g* operated by springs J J, the parts arranged as set forth.

3. The cam L, bell-crank lever M, arm G, and ratchet R, in combination with the shaft *g g*, springs J J, and brace-rod H, constructed substantially as described, for the purpose specified.

LESTER E. ROSS.

Witnesses:

C. H. KING,

GEO. W. SEAMAN, Jr.