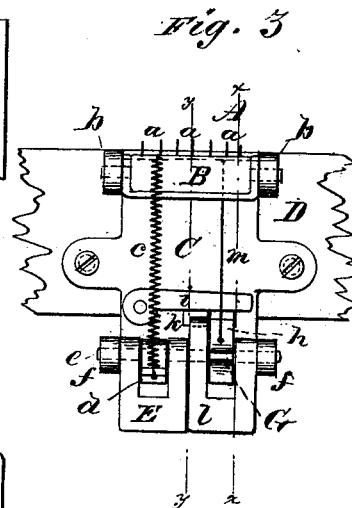
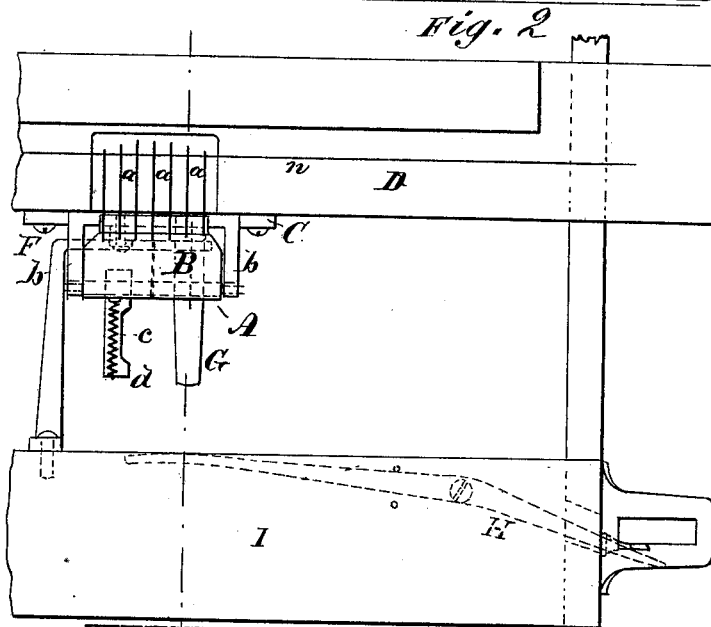
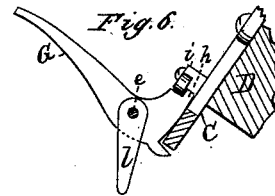
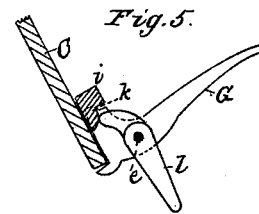
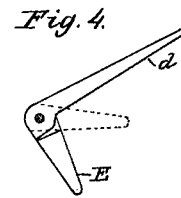
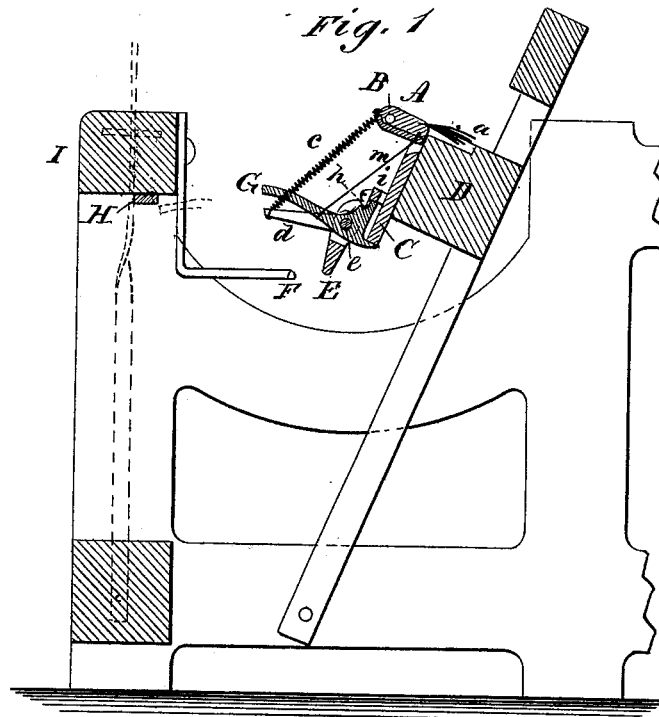


W. NUTTALL.
Weft Stop-Motion for Looms.

No. 219,974.

Patented Sept. 23, 1879.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM NUTTALL, OF WESTERLY, RHODE ISLAND, ASSIGNOR TO NATIONAL STOP MOTION COMPANY, OF SAME PLACE.

IMPROVEMENT IN WEFT-STOP MOTIONS FOR LOOMS.

Specification forming part of Letters Patent No. **219,974**, dated September 23, 1879; application filed November 19, 1877.

To all whom it may concern:

Be it known that I, WILLIAM NUTTALL, of Westerly, in the county of Washington and State of Rhode Island, have invented a new and Improved Weft-Stop Motion for Looms, of which the following is a specification.

Figure 1 is a side sectional elevation. Fig. 2 is a plan view. Fig. 3 is a front elevation of a portion of the stop-motion. Fig. 4 is a detail view. Fig. 5 is a section on line *y y* of Fig. 3. Fig. 6 is a section on line *x x* of Fig. 3.

Similar letters of reference indicate corresponding parts.

My invention consists of a comb of wires combined with devices for raising it under the weft-thread in front of the reed, and while the lathe is moving toward the cloth after the shuttle has passed, and while it is passing from one box to the other, and allowing it to drop down, so as not to interfere with the beating up of the weft by the reed.

It also consists in a novel arrangement of devices by which, in case the weft-thread is absent or broken, the loom will be stopped.

Referring to the drawings, A is a comb, consisting of the head B and the curved wires *a*. The head B is pivoted between two arms, *b*, that extend from the top of the plate C, which is attached to the lathe-beam D.

There are seven curved wires, *a*, in the comb, which are arranged with their convex side uppermost. They are also arranged in a curved line in a transverse direction—i. e., with the middle wire the highest and the outer ones the lowest, and the intermediate wires arranged so that all of the wires are upon the same curved line. The wires thus curved and arranged will press the weft-thread against the warp forming the upper part of the shed without kinking or crimping the weft-thread.

The fingers *a* project over the lathe-beam D, and the head B is connected by an elastic strap or spring, *c*, with the lever *d*, which is fulcrumed on a rod, *e*, supported by ears *f*, that project from the plate C.

E is a lever pivoted on the rod *e*, which engages a shoulder on the lever *d* when the lathe-beam D moves forward, so as to bring the said lever E into contact with an arm, F, that projects from the breast-beam. When the lathe-

beam moves forward, the lever E strikes the arm F and depresses the lever *d*, which, by means of its connection with the comb-head B, causes the fingers *a a* to rise against the weft-thread.

A dagger, G, is pivoted on the rod *e*, and is provided with an arm, *h*, that extends upward and is engaged by a latch, *i*, pivoted to the plate C. The latch *i* is provided with a downwardly-projecting cam nib or lug, *k*, which, as the lay moves back, is engaged by a projecting arm of the lever *l*, that is pivoted on the rod *e*, to disengage the said latch from the arm of the dagger. A cord or strap, *m*, connects the dagger G with the comb-head B. The elastic strap *c* is attached to the comb-head on one side of its pivot, and the cord or strap *m* upon the other side of its pivot, so that when the elastic strap is drawn downward the dagger G will be raised if the weft-thread is absent or broken.

A lever, H, is pivoted to the under side of the breast-beam I, and is connected with the stopping mechanism of the loom. Its longer arm is in the path of the dagger G when the latter is elevated.

The operation of my improved stop-motion is as follows: When the lathe of the loom is moving forward toward the cloth, the lever or arm E comes into contact with the arm F and depresses the lever *d*, which, drawing upon the elastic strap *c*, raises the wires *a* of the comb up through that part of the warp that forms the bottom of the shed in front of the reed. If the weft-thread (represented by *n*) is in the shed, the comb A presses it against the part of the warp that forms the upper part of the shed until the lever E has passed over the arm F, when the pressure exerted on the comb by the lever is released, and the dagger being connected to the opposite side of the comb-frame causes the comb to drop down out of the shed, so as not to interfere with the beating up of the weft-thread by the reed. When the weft-thread is absent or broken, the comb rises up higher through the warp than when it is resisted by the weft-thread backed by the upper shed of the warp, and by means of the cord or strap *m* raises the dagger G until its arm *h* is engaged by the latch *i*, which holds up the

dagger until it moves forward and strikes the lever H, which actuates the stopping mechanism of the loom. When the lathe moves back from the cloth, the lever *l* is engaged by the arm F and moved so as to engage the cam nib or lug *k* on the latch *i*, raising the latch and releasing the dagger, which drops down and leaves the mechanism ready for the next pick.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The comb A, the elastic strap or spring *c*, and the levers E *d*, in combination with the bracket C, adapted to be attached to the lathe

of a loom, and the arm F, adapted to be attached to the breast-beam, substantially as and for the purpose set forth.

2. The comb A, the elastic strap or spring *c*, the levers E *d*, the strap *m*, the dagger G, provided with the arm *h*, the lever *l*, and the latch *i*, provided with the cam *k*, in combination with the lathe-beam D, the breast-beam I, the arm F, and lever H, substantially as and for the purpose set forth.

WILLIAM NUTTALL.

Witnesses:

HENRY B. GAVITT,
THOMAS VINCENT.