2 Sheets, Sheet. 1.

# E. Barton,

## Fringe Mach.

No. 87,620. Patented Mar. 9, 1869

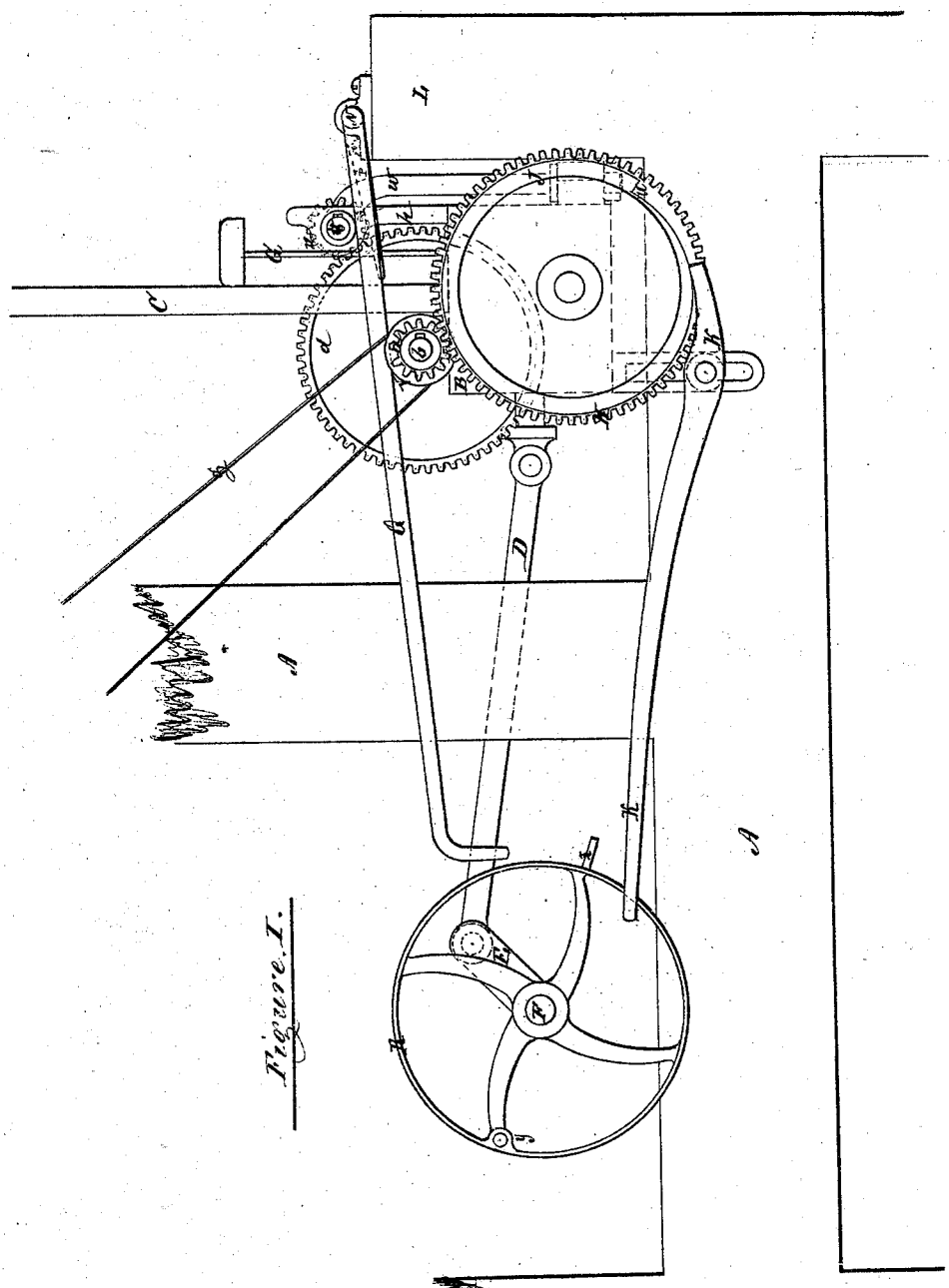



Figure. 1.

Witnesses

Jno Brush

Jno Burke

Inventor

Edwin Barton

2 Sheets. Sheet. 2.

# E. Barton,

## Fringe Mach.

No. 87,620. Patented. Mar. 9. 1869.

Figure. II.

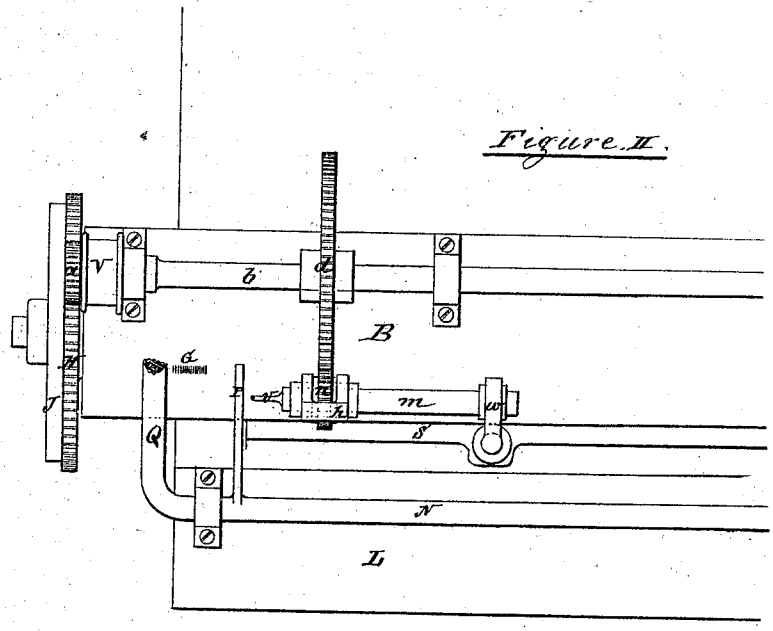
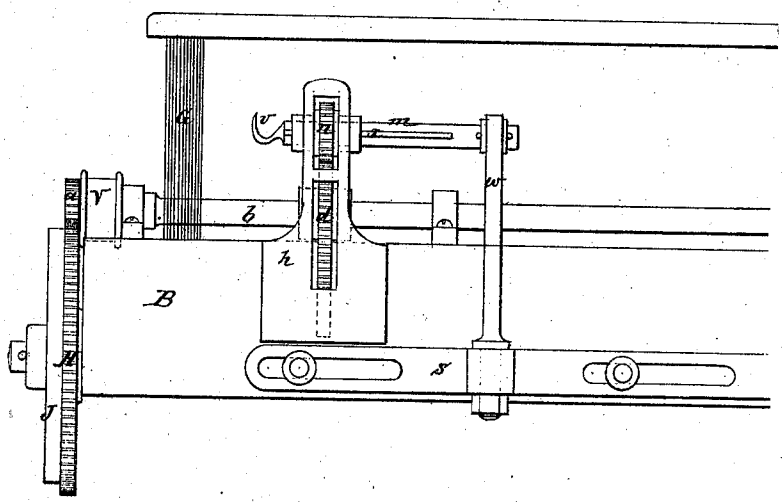



Figure. III.




Witnesses

Jno. Brush

Jno Burke

Inventor.

Edwin Barton

# EDWIN BARTON, OF PATERSON, NEW JERSEY.

*Letters Patent No.* 87,620, *dated March* 9, 1869.

## IMPROVEMENT IN MACHINE FOR TWISTING BULLION-FRINGE.

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, EDWIN BARTON, of Paterson, in the State of New Jersey, have invented a new and useful "Improvement in Looms for Making and Twisting in the Loom, Bullion-Fringe;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure I, Sheet I, represents a side elevation of part of a loom with my improvement attached.

Figure II, Sheet II, represents a top view, and

Figure III, Sheet II, a front view of my improvement.

Similar letters represent similar parts in all the figures.

My invention consists in the construction and arrangement of parts, and the combination of the same, substantially as hereinafter set forth.

In the accompanying drawing—

A represents part of the frame of the loom.

B represents the swinging frame, or movable batten, suspended by the rod C, at any convenient and suitable part, at the top of the loom-frame, and operated by means of the connecting-rod D, connected to a crank, E, attached to the crank-shaft F, constructed in the usual manner, so that, at each end of its motion, this swinging batten B will remain some time stationary, or at rest.

To this batten B, the reed G, constructed in the usual manner, is attached.

On the end of the frame, or batten B, a toothed wheel, H, is attached, turning on a suitable bearing, and operated by a pinion, *a*, fast on the end of a shaft, *b*, situated on the top of the swinging frame, or batten B.

On this shaft *b*, a toothed wheel, *d*, is fastened, meshing into a pinion, *n*, turning, in suitable bearings, in the frame *h*, attached to the front part of the batten B.

Through this pinion *n*, a spindle, *m*, passes, having, on the end nearest the reed G, a hook, *v*, and on its other end, an arm, *w*, which latter is connected with the hook-bar *s*, situated on the front of the batten B.

The hook-spindle *m* is provided with a long feather, or key *x*, fitting into a suitable recess in the heel of the pinion *n*, to allow the same to slide backward and forward in said pinion, and to be operated by the same in every position.

This hook-spindle *m* is situated some little distance before the reed G, and the hook-bar *s* is arranged so as to slide, in suitable guides, on the front of the batten B, and is operated by suitable mechanism, so as to move, at the proper and desired moment, this hook-spindle *m*, past the reed G, and back again, for the purpose hereafter described.

To the wheel H, a plain wheel, J, is attached, provided with a recess, or cavity *u*, (see Fig. I,) into which a pawl, or the end of a lever K, fits, for the purpose of holding the said wheel H, and, through the same, the pinion *a* and shaft *b*, as well as all parts connected with this shaft *b*, stationary, during certain times of the operation of the loom.

To the pinion *a*, a pulley, or band-wheel V, is attached, connected, by means of a belt, *g*, with a pulley on the loom, for the purpose of communicating motion to the shaft *b*, and the parts attached to the same, except when stopped, by the action of the lever K, against the recess *u*, on the wheel J.

Instead of attaching the pulley V to the pinion *a*, or to the shaft *b*, the same may be attached to the toothed wheel H.

To the breast-beam L, of the loom, a small shaft, N, is fixed, to which an arm, P, is attached, for the purpose of throwing the twisted bullion-fringe off from the end of the hook *v*.

An arm, or lever Q, is attached to the end of this shaft N, operated by a projection, *z*, fast on the pulley R, or by any other part of the loom, in such a manner as to operate the shaft N, and consequently the arm P, at the proper moment.

On the pulley R, which is attached to the crank-shaft F, another projection, *y*, is attached, to operate the end of the lever K, so as to bring the same clear of the recess, or cavity *u*, in the wheel J, and allow the belt *g* to operate the shaft *b*.

The operation of the loom is as follows:

After the warp-yarns have been separated by the action of the heddles, in the usual manner, ready for the weft or woof to pass through, the hook-bar *s* is operated so as to move the hook-spindle *m* through the warp, and take hold of the weft by means of the hook *v*, after which the same is moved back again the desired distance to bring the weft through the warp, and give the required length of the loop on one side of the warp, to form the fringe.

The warp-yarns are then changed by the action of the heddles, and the batten B moved towards the breast-beam L, to tighten the weft.

By this motion of the batten B, the belt *g*, running on the pulley V, is tightened, so as to communicate motion to said pulley and to the shaft *b*, and, at the same moment, when the batten B arrives at the end of its motion, the projection *y*, on the pulley R, operates the lever K, so as to bring its end clear of the recess *u* in the wheel J, and allow thereby the belt *g* to rotate the shaft *b*, and give motion to the hook-spindle *m*, through the gearing *d* and *n*, so as to twist the loop on the hook *v* as much as required, to produce the desired bullion-fringe.

At the completion of this operation, the amount and duration of which may easily be regulated by the relative proportion of the gear-wheels, the end of the

lever K will fall again in the recess *u* on the wheel J, and stop thus the further motion of the shaft *b*, and, consequently, of the hook-spindle *m*.

The projection *z*, on the pulley R, operates then the lever Q, so as to move the arm P on the shaft N upward, throwing thereby the twisted loop or fringe off from the end of the hook *v*.

The batten B is then moved back again, toward the crank-shaft F, ready for the next passage of the weft, when the same operation is repeated.

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

1. The arrangement of the sliding hook-spindle *m*, having a feather, *x*, and working through the pinion *n*, in fixed frame *h*, and connected, by means of arms *w*, with the slide *s*, all operating substantially as herein described.

2. The rock-shaft N, having a lever, Q, and arm, P, whereby the fringe is disengaged from the hook, said shaft being operated by a tappet on the wheel R, striking lever Q, as herein described.

3. The lever K, which engages with the notch *u*, when operated by means of a tappet on the wheel R, substantially as and for the purpose herein described.

4. The combination and arrangement of the sliding hook-spindle *m*, connected with slide *s*, the shaft *b*, gearing *n d*, pinion *a*, wheels H J, the latter having a recess *u*, the shaft N, provided with lever Q and arm P, and the wheel R, carrying tappets *y z*, all operating together substantially as herein described.

EDWIN BARTON.

Witnesses:

JNO. BRUSH,

JNO. BURKE.