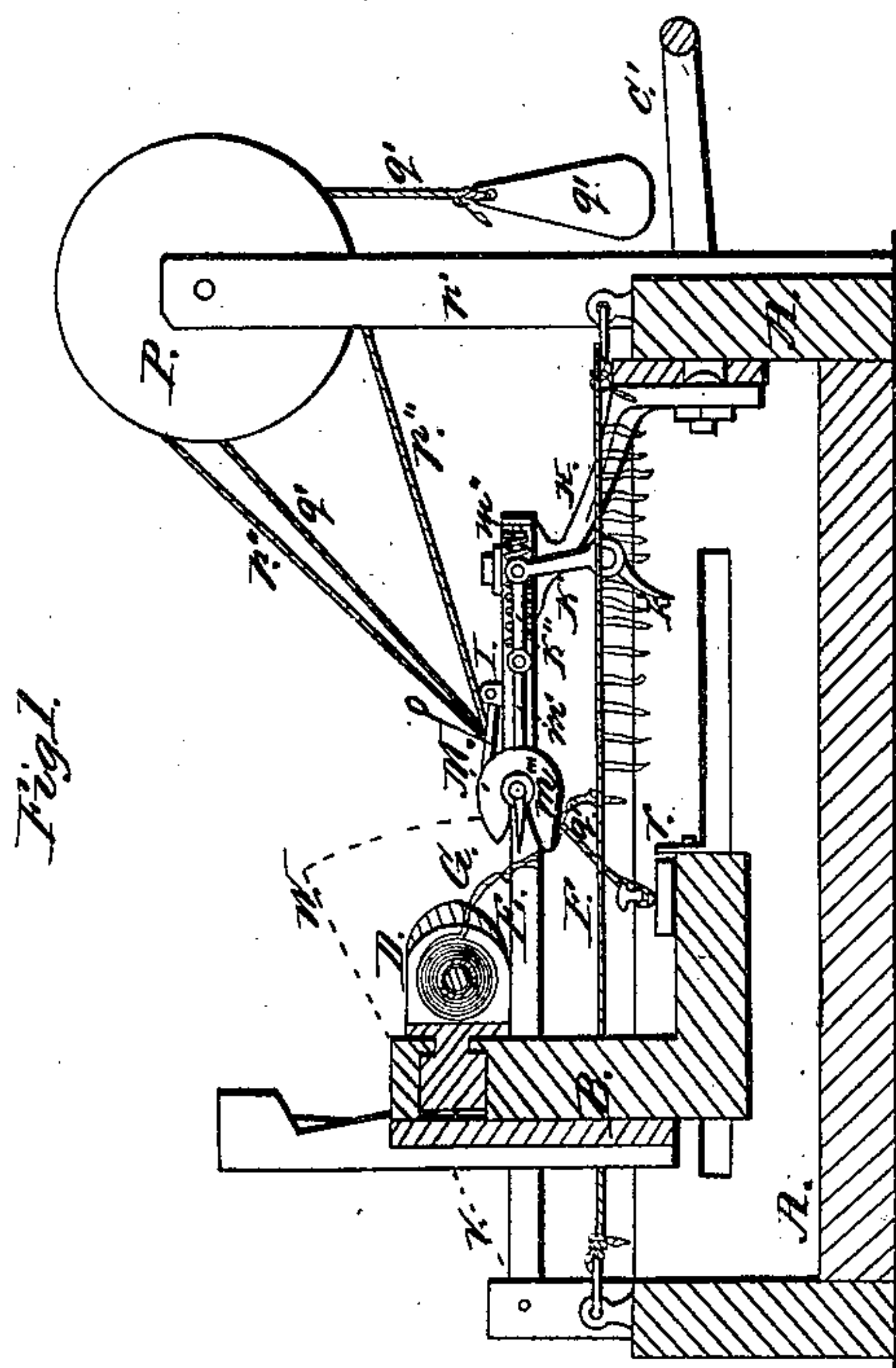
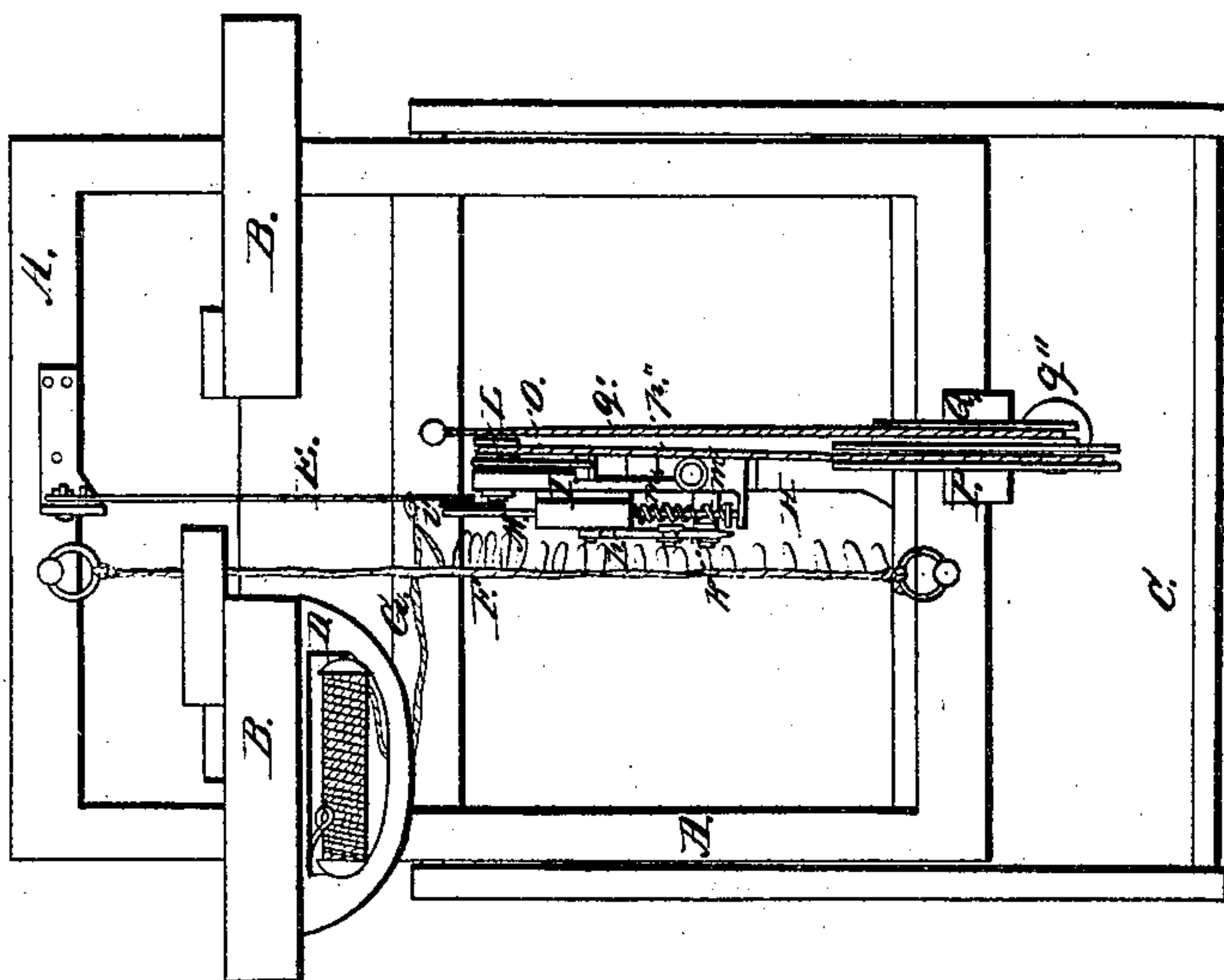


E. Doran.
Fringe Machine.

Nº 81,073.

Patented Aug. 18, 1868.



Witnesses,
Ben. M. Watson
Wm. H. Morrison

Inventor,
E. Doran

United States Patent Office.

EDWARD DORAN. OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 81,073, dated August 18, 1868.

IMPROVEMENT IN MACHINE FOR MAKING 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, EDWARD DORAN, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Device for Twisting Fringe-Loops in the Loom; 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 accompanying drawings, in which—

Figure 1 is a vertical transverse section of a fringe-loom frame, showing my invention applied thereto, and Figure 2 a plan view of the same—

Like letters of reference indicating the same parts when in both figures.

The object of my invention is to afford a device of more simple and inexpensive construction and application, whereby the twists required in the loops of the fringe are automatically produced in a perfect manner as the said fringe is being woven in the loom; and my invention consists in the application to a fringe-loom of mechanical devices constructed and operating substantially as hereinafter described.

Referring to the drawings, A represents the main frame of the loom; B, the lay of the same; C, the lever for operating the lay B by hand; D, the shuttle; E, the loop-bar; F, the fringe being woven; and G the cord, on a spool in the shuttle D. These parts are substantially the same in construction and mode of operation as in all fringe-loom.

The new devices are as follows, viz: H is a bracket, which is adjustably fixed to the frame A, and supports, in a horizontal position, an adjustable plate, I, and also a vertical arm, K, and a loose trigger, *k'*. L is a small grooved pulley, fixed on an arbor, which rotates in the inner end of plate I, and carries around with it a slender tapering arm, *l'*, which is fixed rigidly at a right angle to the said arbor. M is a thin vertical plate, projecting back from the end of a stem, *m'*, which is made to slide horizontally in the plate I, and is jointed by a bar, *k''*, to the vertical lever K, and has also, arranged around its outer end, a spiral spring, *m''*, one end of which abuts against the plate I, and the other end against a shoulder or pin on the outer end of *m'*. The thin vertical plate M has an open horizontal slot, *m'''*, extending from its centre, and widening outward, (see fig. 1,) and when the plate is at rest its open centre is directly opposite to the end of the arbor which carries the slender arm *l'*. O is a pawl, which catches in a ratchet-tooth in the periphery of the pulley L, arranged so as to stop the rotary motion of the said pulley L, when the latter is running in one direction, (as will be explained,) and the arm *l'*, on its arbor, reaches the horizontal position shown in the drawings. P is a large grooved pulley, supported on an upright, *p'*, and connected, by a crossing-cord, *p''*, with the small pulley L. Attached to the pulley P there is another pulley of smaller size, Q, around in the groove of which a cord, *q'*, passes once or twice, and has its inner end attached to the lay B, whilst from its outer end a weight, *q''*, is suspended. The loop-bar E has its outer end pivoted to the rear part of the frame A, whilst its inner end extends forward nearly into contact with the arbor of the pulley L, yet so that the arm *l'* thereon will pass it freely, (see fig. 2,) and while in the position shown in the drawings, the shuttle D will pass freely across over it, but when elevated, as indicated by the dotted lines V W, the said shuttle will pass freely across under it, the said bar E being raised and lowered by the movement of the nearest heddle, (not shown,) it being connected therewith by a cord or otherwise for the purpose.

Operation: As the lay B is moved backward, the shed of the chain F opens, and the shuttle D passes either over or under the bar E, the latter being lowered and raised alternately for the purpose by the attached heddle, and thus causes the cord G, which is connected with the spool in the shuttle D, to pass from the chain F of the fringe, with which it is also connected, around the said bar E. As the lay B is moved forward, the shed closes, the bar E is lowered to its original horizontal position, and the loop or cord G on the latter pushed off of the said bar and on to the tapering arm *l'* of the arbor to which the pulley L is fixed. The said arm *l'* having been brought into the proper position (shown in the drawings) by the previous backward movement of the lay, the weight *q''* drawing the pulley-cord *q'* until the rotary motion of the pulley L is suddenly stopped by the pawl O, as the latter falls into the ratchet-notch or tooth in the said pulley L. On the backward movement of the

lay B, the pulley L is rapidly rotated, and thus twists the loop of cord on the arm *l'*, and on the return movement of the lay B, a small projection, *r*, on the said lay, pulls forward the lower end of the trigger *k'*, and thus pushes back the lever-arm K, and consequently the slotted plate M, so as to cause the latter to push the twisted loop off of the tapered arm *l'*.

It will therefore be seen that this twisting-device operates automatically, when kept in motion by the movements of the loom, and effectually puts the required twists in the loops of the fringe, as the same are successively formed around and discharged from the looping-bar E upon the arm *l'*, during the weaving of the fringe; that the latter will be in a perfectly-finished condition when taken out of the loom, and that the device is simple and inexpensive of construction, and can be readily applied to any of the fringe-loom in use.

I am aware that the loops for bullion fringe have before been automatically twisted by complicated and expensive devices applied to the loom, as in the English patents of Livesey and of Brooman; therefore, I do not desire to claim broadly the automatically twisting of the said loops in a loom; but, having fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is confined to the following, viz—

1. The pulley L, with its ratchet-tooth or notch, in combination with the pawl O, and the arbor with its arm *l'*, the said parts being constructed, arranged, and operated by the cord *p''*, pulleys P and Q, cord *q'*, weight *q''*, and the lay B, as and for the purposes described.

2. The slotted plate M, stem *m'*, spring *m''*, bar *k''*, and lever K, the said parts being arranged and supported so as to be operated together, by means of the said spring *m''*, trigger *k'*, and the projection *r* on the lay, or their equivalents, substantially as and for the purpose described.

E. DORAN.

Witnesses:

BENJ. MORISON,
WM. H. MORISON.