L. D. Valetton.

Fringe Machine.

No. 912.
31,916.

Patented Apr. 2, 1861.

Fig. 1

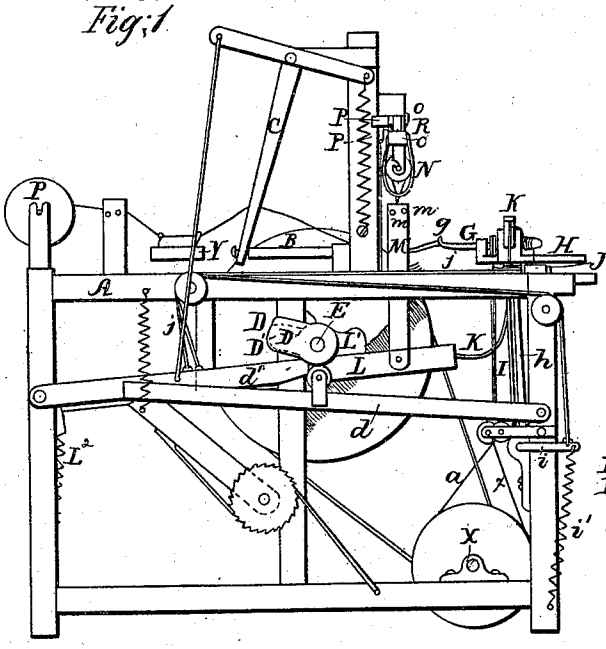


Fig. 2.

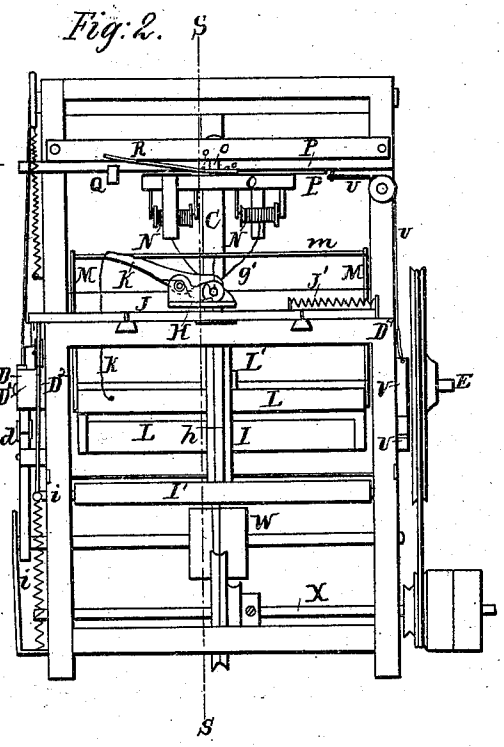


Fig. 3.

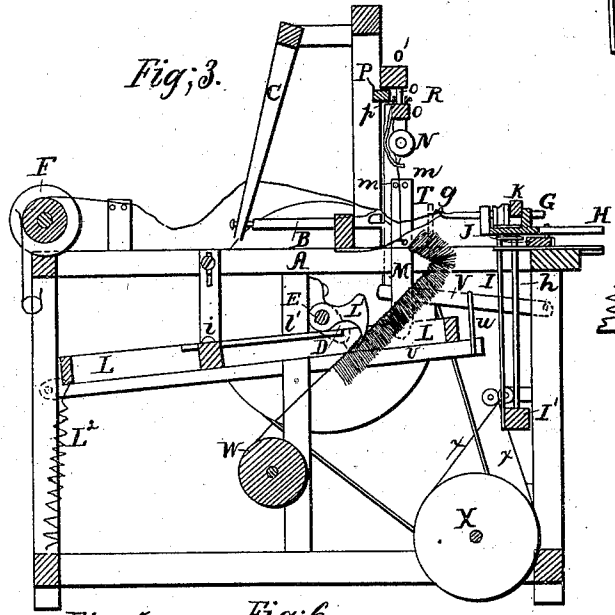


Fig. 4.

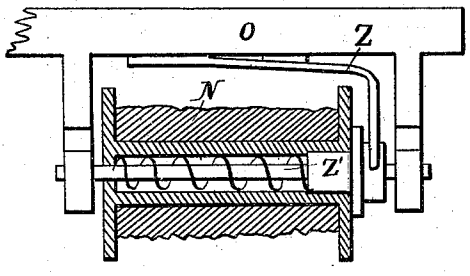


Fig. 5.

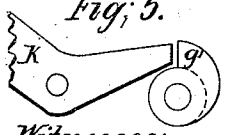
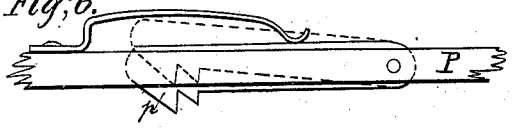


Fig. 6.



Witnesses;

E. von Northausen.

G. H. Babcock

Inventor;

Louis Dominique Valetton

UNITED STATES PATENT OFFICE.

LOUIS DOMINIQUE VALETTON, OF NEW YORK, N. Y.

MACHINE FOR MAKING FRINGE.

Specification of Letters Patent No. 31,916, dated April 2, 1861.

To all whom it may concern:

Be it known that I, LOUIS DOMINIQUE VALETTON, of New York, in the county and State of New York, have invented a new and Improved Machine for Making Twisted Fringes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, Fig. 2 is an end view, and Fig. 3 is a vertical section on the line S S in Fig. 2, and Figs. 4, 5, and 6 are views of portions on a larger scale.

The fringes for the manufacture of which my machine is designed, are composed of a cord or "guipure" and two wires. The cord is folded in short lengths and twisted, the strands thus produced being secured together by the wires twisted among them. These fringes are largely employed in the manufacture of tassels and have heretofore been made by hand, at a considerable loss of time, and a consequent expense.

My machine is calculated to produce such fringes at a very rapid rate and with a certainty and regularity which is impossible in the ordinary method.

My machine is composed of arrangements of mechanism for producing four primary or principal motions or operations, namely: 1st feeding the guipure in the required quantity at the proper time folded ready for twisting, 2d twisting the fold so produced, 3rd fastening the same by twisting the wires around it, and 4th discharging the strand. All the other motions and parts of the complete machine are secondary or auxiliary to these.

The mechanism by which I perform the first part of the operation, namely, the feeding in and folding the guipure so as to form the strands, consists of a forked slide or carrier, shown in Figs. 1 and 3 and marked B. This carrier is fitted in suitable bearings or slides in the frame A to cause it to reciprocate in a right line, and its upper prong is pierced by an eye through which the guipure is threaded, as represented by the red line. It receives a reciprocating movement at the proper times through a lever C, operated by means of a cam D on the shaft E, operating on a treadle d as shown in Figs. 1 and 2. The guipure comes from the spool, F through the lever C as represented. The lower prong of the carrier B has a vertical notch. When the carrier is forced forward, the portion of the guipure which extends from the eye to the finished work draws in to this notch, and is thus held standing across the forked end of the carrier, when the latter is in the proper position for transferring the strand to the twisting mechanism which will now be described.

A spindle, G, having a hook g, at one end is hung in suitable bearings in a casting H. This casting H is fixed to the top of a vertical shaft h, supported in a frame I which frame is mounted on a horizontal shaft I′. This arrangement is such that the spindle G has three distinct motions, viz. rotary, around its axis, oscillating horizontally on the shaft h, and vibratory, in a vertical plane with the shaft I′ as a center. The first of these motions is derived by a belt, x, from the shaft X, as represented. The second is received from a cam D′ (behind D) through a treadle d' cord j and sliding rod J,—which latter carries a pin projecting through a slot in the casting H,—and spring J′. The third motion—(in the vertical plane)—is received from a similar cam, treadle, cord, and arm i on the shaft I′, and spring i'.

The spindle G carries a clutch or stop g', and a lever K is so operated as to come in contact therewith and stop the rotary motion leaving the hook g, in a horizontal position, the belt being sufficiently loose to slip when this occurs. At this moment the cam D′ operates the proper mechanism for giving the spindle its horizontal vibration, and as it returns to its position the hook g is caused to pass between the prongs of B behind the guipure, so that as the carrier B is withdrawn the guipure is left suspended on the hook g and forming a loop of proper length for a strand of the fringe. It is necessary before this strand can be twisted, that both parts of it should be pressed into contact or into close proximity, and I accomplish this by the following means. Inside of the frame A, a frame work L is supported at the points l, so as to be capable of vibrating vertically. It receives this vibrating motion from a cam L′ on the shaft E acting upon an adjustable piece l'. At the side of this frame L two uprights M, M, are attached supported by suitable projections or ways on the frame A, and carrying two horizontal rods m, m, as represented. As the cam L′ depresses the frame L, the rods m, m, are brought down so as to depress the upper portion of the loop attached to the

hook g, pressing it downward in contact with the lower portion. At this instant a cord k, which extends from L to the stop lever K, releases the latter from the stop g', on the spindle G and the latter is rotated by the belt x so as to twist the strand. As soon as the cam L′ releases the frame L so as to allow it to return by the action of the spring L^2, the stop lever K again acts and stops the spindle. By adjusting the piece l so as to cause the cam L′ to hold the frame L down for a longer or shorter period the amount of twist in the strand can be graduated to suit various sizes or kinds of fringe.

In twisting, the strand becomes shorter and it is necessary to make provision for such shortening. The casting H which supports the spindles is therefore so supported upon the horizontal shaft I′ as above described, that it may vibrate in a vertical plane coinciding with the axis of the spindle G, and by means of the cam D^2 acting through its treadle and cord on the arm i, the spindle is so moved endwise as to compensate for the shortening above alluded to. The spring i' returns it to its former position when the cam D^2 ceases to act.

The wires which confine the strands as fast as they are made are represented by blue lines and are wound on spools N, N. These spools are hung in a frame O, so supported on a pin o' as to be capable of revolving for the purpose of twisting the wires around the strands. This motion takes place simultaneously with the twisting of the strand, and is produced by means of a sliding bar, P, carrying a spring rack p, which acts upon four pins o projecting from O and serving as a four leaved pinion. The bar P receives a reciprocating movement by means of a cam D^4, on the shaft E, acting on treadles or leaves U, V, and cords u, v, as shown in Figs. 2 and 3. As the bar P is drawn forward the spring rack p engages the pins on O and rotates the latter and the spools supported thereon one half a revolution, crossing the two wires over the strand just formed and confining it. A stop Q is so placed on P as to slide into the path of O and prevent the momentum of the latter from carrying it too far. A spring R is also made to bear against the pins to help steady the frame O and hold it in position. The rods m, m, one each side of the wires, press the strand close into the angle formed by the latter, and the obtuseness of this angle, (see Fig. 2) causes the twisting of the wires to take place immediately in contact with the strand so as to bind it tightly. In order to further insure this action I attach spring brakes Z, see Fig. 4, to the spools N, and provide a spring Z′ (Fig. 4) to rotate the spool slightly backward when any slack is produced, thus keeping a constant tension on the wires. The rods m, m, when in the position shown in the drawings also tend to steady the wires and the spools N, N, and prevent them from turning.

The strand has now been fed to the hook, twisted and secured by the wires, and is finished. At this point in the operation of the machine the carrier B is again moved forward to feed in a new strand, and the cam D operates its connections to give the casting H and the spindle G their horizontal vibration as before. As the spindle and hook are thus vibrated the strand strikes a stationary pin or discharging piece T, (see Fig. 3,) and is released from the hook. In its return movement the hook takes a second strand from the carrier B, and the whole operation is repeated.

The fringe, as fast as it is completed is wound upon a drum W, which receives a very slight rotary movement at the proper times by means of a ratchet wheel and pawl operated by the cam D, as represented in Fig. 1. The shaft E receives its motion from the shaft X, which receives its motion by a belt, not represented, from any convenient power. The relative motions of the several parts are graduated to suit different characters of work, by cone pulleys. A weight Y is attached to the guipure, as represented in Fig. 1, to take up the slack and keep it always at a proper tension.

Several sets of carriers, hooks and spool frames, may be combined in one frame and operated by the same mechanism, so as to greatly increase the amount of work performed.

I do not confine myself to the precise means of operating the several parts herein described but may substitute therefor any well known mechanical device which will give a similar effect.

Having now fully described my invention, what I claim as new therein and desire to secure by Letters Patent is:

1. The forked reciprocating carrier B for feeding the guipure to the hook g at the proper time and in the required quantity, substantially as above described.

2. The hooked spindle, G, having a rotating motion, for twisting the fringe, a vibrating movement to compensate for the shortening of the strand, and a reciprocating motion for discharging the strand, and receiving another, substantially as herein specified.

3. In machines for making fringes the employment of the intermittently rotating spool frame, O, for twisting the wire around the strand, substantially as above set forth.

4. The employment of the rods, m, m, or equivalent device having a vibrating motion, in combination with the intermittently rotating spool frame, O, substantially as and for the purposes above set forth.

5. The combination of the reciprocating carrier, B; the rotating and reciprocating hook, *g*, and the revolving spool frame, O, or their equivalents, operating together substantially in the manner and for the purpose herein set forth.

In testimony whereof I have hereunto set my name in the presence of two subscribing witnesses.

LOUIS DOMINIQUE VALETTON.

Witnesses:
E. VON NORDHAUSEN,
G. H. BABCOCK.