



# United States Patent Office.

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Letters Patent No. 80,134, dated July 21, 1868.

## IMPROVEMENT IN MACHINE FOR MANUFACTURING CHENILLE.

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, WILLIAM CANTER, of the city and county of New York, and State of New York, have invented certain new and useful Improvements in Machines for Manufacturing Chenille; and I do hereby declare that the following is a full and exact description thereof.

I will first describe what I consider the best means of carrying out my invention, and will afterwards designate the points which I believe to be new.

The accompanying drawing forms a part of this specification.

Figure 1 is a side view, and

Figure 2 is an end view of the head or main portion of the mechanism.

Figure 3 is a side view, and

Figure 4 a plain view of a traversing twister, which acts, in connection with the other parts, to produce the chenille.

Figure 5 is a side view on a smaller scale, showing the relations of the parts represented in figs. 1 2, and figs. 3 4.

The drawing represents very clearly the novel parts, with so much of the other parts as is necessary to indicate their relations thereto.

Similar letters of reference indicate like parts in all the figures.

Tints are employed merely to aid in distinguishing parts, and do not necessarily indicate materials. The materials of all the principal parts may be iron and steel. The framing, and the bobbin which carries the silk, may be of wood.

A is the fixed framing, of wood; *a* is a hollow tube fixed therein, and open at both ends. Through this tube traverses one of the "guts," a strand of wire, or of linen or other material, which forms one of the longitudinal strands in the chenille.

My machine confines the silk between two such guts, which are twisted together in the act of manufacturing the chenille, and thus confine the silk by holding it between the twisted strands. The gut which comes through the tube *a* is marked M. The other gut is marked N. Both these are drawn from spools or other sources, not represented, and are arranged to maintain a moderate tension as they are drawn forward into the machine by the action of the mechanism to be described below. The gut, N, is led forward under the pulley or roller O, and is thence led up to be introduced into the chenille, as will presently appear.

B is a flier, mounted on the tube *a*, provided with pulleys B<sup>1</sup> B<sup>2</sup>, &c., by which a rapid rotatory motion may be imparted by the aid of a round belt from larger pulleys at any convenient place not represented.

C is a spool or bobbin, mounted as represented, with a groove in one of its flanges, in which the cord may rest, with a weight as usual, in order to maintain a gentle and a uniform draught on the silk. The silk is wound on this spool C, and is led off through the flier in a manner which will be well understood by mechanics, and is wound around on the gut M, and is held thereon by the gut N, so that it is finally and properly confined between them.

The devices for properly effecting this operation, and for cutting the silk after it is wound, involve some of the principal features of novelty in my invention, and will be minutely described below.

The silk can be wound on the bobbin C, either by removing the bobbin or by a reversing motion of the driving-mechanism, as may be preferred.

On the front end of the tube *a* is secured a thimble, D, in which is a small hole, through which the gut M is led, as represented, and is provided with two pins or fixed projections of polished steel, mounted parallel to each other, as indicated by *d*. It is also provided with a pin, standing inclined to these two, as indicated by *d'*. The silk from the flier B is wound around the tapering skeleton formed by these pins *d d'*. Each succeeding coil moves forward towards the smaller end of this tapering skeleton, and ultimately attains the size due to the pins *d d'*; that is to say, each coil is of the size due to the diameter and distance apart of the two pins *d* and *d'*. The gut M lies inside, or in the space between those pins.

E is a roller, having a core of iron or steel, and a thick coating or outer surface of vulcanised India rubber. This roller, E, is turned by means of the pulley E<sup>1</sup>, which receives a slow rotary motion by means of the round belt E<sup>2</sup>. The surface of this roller E presses firmly against each succeeding coil of the silk, and moves it slowly forward on the polished steel pins *d d*.

I have designated the strand of silk *c*. I have called it silk, though, in making some kinds of chenille, worsted, or various other materials may be used instead of silk. I mean by "silk," in this specification, the pile or material which forms the ornamental surface of my chenille.

I cut a portion of the coils of the silk, and leave a portion uncut; that is to say, for a certain length, say one inch, I cut every coil, making "cut chenille," as indicated by Y, and then for another distance, which may be equal, or more or less, I leave the silk uncut, making "uncut chenille," as indicated by Z. This gives a peculiar effect to my chenille, and is highly attractive in appearance.

G is a circular knife, mounted on the shaft *g*, and receiving a rotatory motion by means of the pulleys G<sup>1</sup> and the belt G<sup>2</sup>. The bearings in which the shaft *g* is supported are not fixed, but are movable, and are raised and lowered at regular intervals.

H H are levers, firmly fixed on the shaft *h*. I is a link, pivoted to the front lever H by the pivot *h'*, as represented. In the upper end of the link I is a long slot, as indicated by *z*. A crank, J, on the shaft *j*, stands in this slot *z*, and is rotated by means of the pulleys J<sup>1</sup>, which receive a round belt, as indicated. At each rotation the crank J raises the link I, and consequently the levers H H and the rotating knife G. It raises it at each elevation entirely clear of the silk, and during the period while the knife thus remains elevated the chenille is delivered in an uncut condition.

When, by the gradual rotation of the crank J, the rotating knife G is lowered so as to come in contact with the silk, it commences to cut the coils of the silk, and thus it produces cut chenille. This operation proceeds until the rotation of the crank J has again lifted the knife G. The fact that the crank J acts in the slot *z*, as represented, allows the knife G to remain down at a uniform level for a considerable period. It is supported at the right level by the stop K, on which the levers H H rest when at their lowest position.

It will readily be understood, that by changing the belt J<sup>2</sup> upon other parts of the pulleys J<sup>1</sup>, the velocity of the rotation of the crank J may be varied at pleasure within the limits required in practice, and by varying the throw of the crank J, the portion of each revolution during which the chenille will be cut, may be increased or diminished, as required. I am thus able to vary, within wide limits, the quantities and characters of the chenille manufactured by my machine.

My twisting-device is very simple and effective. P is a fixed frame, traversing on the wire L by the aid of two grooved wheels, P<sup>1</sup> P<sup>2</sup>. It is steadied in its motion by the two pins *p<sup>1</sup> p<sup>2</sup>*, which stand in contact on the under side of the wire L.

R is a twisting-hook, supported in bearings in the frame P, as represented, and receiving a proper rotatory motion by means of the pulley R', &c., which receives the long endless belt or cord T, in the manner represented; that is to say, the endless belt or cord T, which is driven with a proper rapidity by means of the large pulley, U, (see fig. 5,) is carried under the pulley V<sup>1</sup>, thence up over the pulley R', thence down under the pulley V<sup>2</sup>, and thence forward by the straining-pulley W, which is held out by the force of the weight W', by means of the cord and pulley represented.

It will be readily seen that the band or cord T, traversing in this manner parallel or nearly parallel to the supporting-wire L, is in the position to drive the twister, whether the twister be near the middle of its traverse or near either end, and I find in practice that the draught due to the traversing of the cord or belt T through the twisting-device, may, by shifting the cord T from one to another of the pulleys R<sup>1</sup> R<sup>2</sup>, &c., be made just sufficient to maintain a proper draught or tension on the chenille as it is delivered, and that as the chenille is delivered by the rotation of the soft-surfaced pulley E, it is drawn away and twisted uniformly and effectively by my twisting-device, and that the twisting-device acts with equal effect, whether at the beginning of the formation of a piece of chenille, or near the end of the operation. When the twister has run out to its full extent, and a piece of chenille is finished, I remove the chenille in the ordinary manner, and traverse the twister back to its original position close to the soft-coated roller E, and then twisting or tying the end to the hook R, again operate the machine, and thus continuously produce the chenille, piece after piece, as required.

Leather, or other soft material other than rubber, may be used with some success as the coating for my roller E; so, also, wood or other convenient strong substance may be used for the core, but I prefer a steel core, with a rubber surface attached, as in the best clothes-wringers.

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

1. I claim, in chenille machines, the alternate rising and sinking motion of the knife or cutter G, substantially herein as specified.
2. I claim, in chenille-machines, the traversing twister herein described, having the belt or cord, T, running on the change-pulleys R<sup>1</sup> R<sup>2</sup>, &c., arranged to impart both the rotatory motion and the requisite draught or tension under all conditions, substantially as herein specified.
3. I claim the alternate cut and uncut chenille, Y Z, constructed substantially in the manner and for the purpose herein set forth.

In testimony whereof, I have hereunto set my hand in presence of two subscribing witnesses.

WM. CANTER.

Witnesses:

D. L. FREEBORN,  
W. C. DEX.