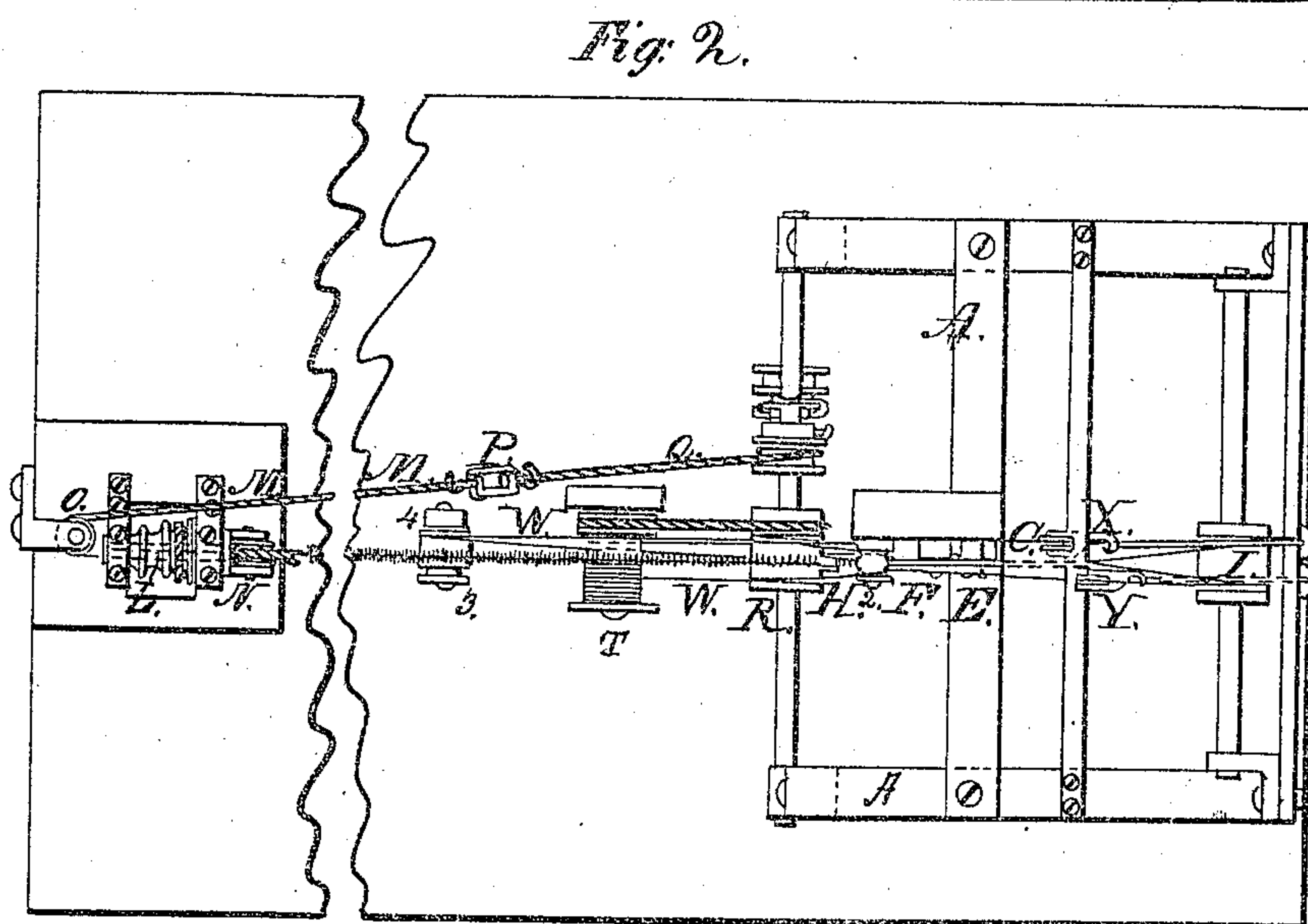
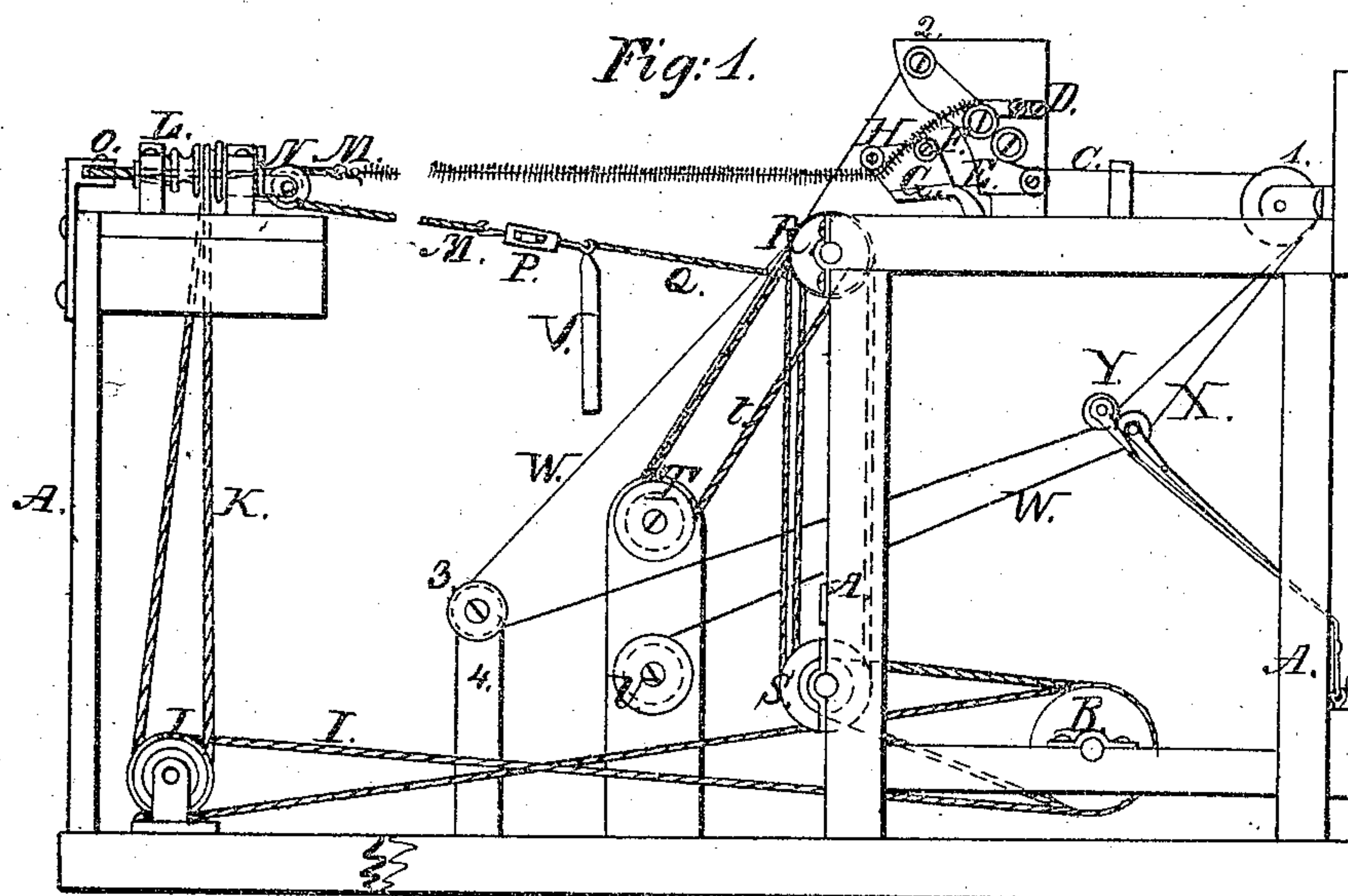


W. CANTER.  
MACHINERY FOR MANUFACTURING CHENILLE.  
No. 37,415. Patented Jan. 13, 1863.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM CANTER, OF NEW YORK, N. Y., ASSIGNOR TO SAMUEL BERNSTEIN,  
OF SAME PLACE.

## IMPROVEMENT IN MACHINERY FOR MANUFACTURING CHENILLE.

Specification forming part of Letters Patent No. 37,415, dated January 13, 1863.

### *To all whom it may concern:*

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

The accompanying drawings form a part of this specification.

Figure 1 is a side view of my machine. Fig. 2 is a plan view of the same.

Neither of these drawings represent the machine absolutely complete in all its details, but sufficient is shown to show the novel features and the relation of the novel features to other portions of the mechanism.

The details of the general mechanism will be found set forth with some degree of minuteness in the patent issued July 22, 1862.

My invention consists in certain means of twisting the chenille, certain means of preventing the twist from disarranging or injuriously affecting the plush, certain means of avoiding the liability of the cutting of the cords or belts around which the chenille is wound, and certain means of taking up the slack of a continuous cord or wire which is employed.

In the patent of July 22 the chenille was only partially twisted on the machine which produced it. In my present machine it is fully and completely twisted. In the former patent aforesaid it was twisted by a circuitous means, first twisting a double cord and afterward transferring the twist or partial twist to the chenille. In my present invention it is twisted directly. In the former patent and in all machines previous to my invention the twist applied in the machines was allowed to run freely upon the roller or into the bite of the rollers in which the material assumes the character of chenille. In my present the twist is not so allowed to run, but is restrained, and only a portion of the final twist is allowed to enter the chenille at first, and the remainder to be added afterward.

In the patent of July 22 the machine was provided with two endless bands, upon and around which the plush was wound, and between which a knife acted to cut the plush at the proper point and allow it to straighten and form the silky material of the goods. It has

been found difficult to avoid occasionally destroying these bands at or near the splice, by reason of the edge of the knife shaving so closely to all parts of each band that it may seize any irregularity, and it is practically impossible to avoid irregularities at the splices in such bands.

In my present machine endless bands, and consequently splices, are dispensed with in the performance of that portion of the operation, and in lieu thereof a single cord or wire of great length is run through the machine in such a manner as to serve in the same way as if two endless belts were employed, but with the advantage of offering no splice or other bunch or irregularity at any point. When the whole extent of my wire or cord has passed through the machine, I am compelled to substitute another or to change the position of the same one, so that it shall pass through again, presenting either the same end first as before or the reverse end; but the length of my wire or cord may be so great that this labor is only required at very long intervals, and it is practically insignificant.

To enable others properly skilled, and who are familiar with the aforesaid former patent and with the several other previous chenille-machines, to make and use my invention, I will proceed to describe it by the aid of the drawings and the letters of reference marked thereon.

A A is a fixed framing, and B is a main drum, from which all the several parts of the mechanism are driven by the aid of belting and gearing. (Only partially represented.)

C is the point where silk, plush, or rather continuous raw silk or other suitable material is wound around, as described in the aforesaid patent of July 22, by means of mechanism not represented, and D is the knife or other suitable cutter which divides the same as before.

E and F are wheels which serve as in the said former patent, the material passing under E before it is cut, and passing therefrom up over F and being cut in the act of passing around or partially around F.

G and H are small wheels mounted on the fixed framing A in such position that the chenille may pass in contact with each in its passage from the wheel F to the twisting ma-



chinery. These wheels are grooved to retain the chenille thereon and allow the same to be readily removed or changed, if desired. The effect of the contact of the chenille with these wheels is to prevent the full twist from passing these points. The material is only partially twisted in the act of leaving the roller or wheel F, and remains in a partly-twisted state until it passes from the wheel or roller H. In passing from H it becomes fully twisted. The evenness and beauty of the goods are much greater when thus produced than when the full twist is given on leaving the wheel F, and the labor of twisting is much less than when the stuff is partially twisted in leaving the wheel F, and is entirely removed from the machine and transferred to another before the final twisting is effected. My twisting is performed by the aid of the mechanism represented on the left side of the figures. This may be at any distance from the principal portion of the machine which may be desired, provided the driving-belt I be sufficiently long.

J is a series of pulleys on a single shaft and turning together by action of the belt I.

K is a belt leading from J to a pulley or series of pulleys on the hollow spindle L, the effect of the several belts I and K and the several sizes of pulleys being to rotate L continuously at any given rate relatively to the rotations of the main drum B, and consequently to give more or less twist, as desired, to the chenille. The rotations of the hollow spindle or shaft L are imparted to the chenille by means of the cord M, which is a hard and compact cord of a character adapted to bend with freedom, but not to be twisted or untwisted, except to a small extent without great resistance. This cord M is hooked to the forward end of the chenille and conducted around a wheel N, which is mounted on and turns with the spindle L, and is thence conducted through the interior of L to the sheave O, and thence to a swivel P, which joins it to a cord, Q as represented. The effect of the rotation of M is to twist the chenille in the obvious manner by rotating the hook which connects it thereto, and as the other end of the chenille is not allowed to rotate, but is slowly delivered in a uniform condition from the rolls or wheels F and H, which are mounted on fixed axes, it follows that twist is accumulated in the chenille to the proper extent to perfect the goods. The rotation of the cord M produces no effect in the other direction, by reason of the swivel P, which rotates freely and causes the rotation to be ended at that point, and not transmitted to and accumulated in the cord Q. This cord Q is coiled one or more times around the shaft R, and passes from thence down to, and is coiled on, a suitable spool or bobbin, which is loosely connected by a friction-spring with the shaft S. The shafts S and R are turned by suitable connections to the main drum B, and take up the cord Q at the same rate as the chenille is delivered from the wheels F and H,

the sheaves N and O rotating slowly on their several axes, to allow the cord M to be gradually drawn endwise through the hollow spindle L, until a complete length of chenille is produced, extending from the wheel H to or near the sheave N. When this is done, the operator stops the machine, disconnects the cord Q from its firm attachment to the shaft S, and cuts off the chenille near the wheel H, leaving a short end ready to commence the next length with. The piece cut is now wound up on a reel, (not represented,) and in the act the cords Q and M are drawn back to their original positions. The hook on the end of M is now attached to the forward and projecting end of the next length of chenille, and the round of operations repeated.

T and U are bobbins on which are coiled or wound a continuous wire, W, the bobbin T being driven by the band t, so as to maintain a continuous but gentle draft on the wire, and wind it upon itself as fast as it is delivered. The bobbin U is subjected to a slight friction, so as to deliver its contents as fast as it is called for, and no faster. On starting the machine the wire W is mostly wound on the bobbin U, but as the work proceeds it is gradually transferred to the bobbin T, until all is consumed or transferred, when the parts must be readjusted by changing the places of the bobbins, putting the bobbin T, which will then be free, in the place of the bobbin U, which will then be empty, and vice versa, and leading the wire each time properly through the several circuits which it is required to make in its transfer. These circuits are such that it is twice carried through the winding mechanism C and around the wheels E and F. The first time that any given part of the wire W goes through the winding and cutting portion of the machine it serves as a substitute for one of the endless belts employed in my former invention, and the second time it goes through (which occurs a few seconds or minutes later) it serves as a substitute for the other endless belt employed in my former invention. The double circuit thus performed by the wire in traveling from the bobbin U to the bobbin T may be traced on the drawings as follows: from U, under a weighted pulley, X, around the pulley or sheave 1, through the winding apparatus C, under the wheel E, over the wheel F, (where it is grazed on its left-hand side by the knife D,) over the wheel or pulley 2, down around the shaft R, passing around this one or more times, as is required to insure a certain and regular motion. This completes what may be called its "first circuit." It next passes down around the wheel or pulley 3, back under the weighted pulley Y, up around the wheel 1, forward again through the winding mechanism C, under the wheel E, and over the wheel F, (being grazed this time on its right side by the knife D,) thence again over the wheel 2, and again down and around the shaft R, passing around one or more times. This completes its second



circuit, and from R it is now led to and wound upon the bobbin T, to rest until at some subsequent period it is again required. I find by trial that this mode of operating is perfectly practicable, but that the wire W is liable to grow longer each time it is thus drawn through the machine. I have observed this more especially to occur during the first few times that a wire is used, and to remedy the inconvenience this might occasion in harmonizing the two circuits of the wire, I employ the weighted pulleys X and Y, as represented, and the pulley 3. By these all slack which might otherwise be embarrassing is automatically taken up, it being readily understood that the pulley 3 may be readily moved backward and forward upon the machine or upon the floor of the room by moving the stand 4, upon which it is supported, in any obvious manner. The effect of the lengthening of the wire W is to induce a descent of the weighted pulley Y, and this I allow to proceed until it becomes inconvenient or in danger of becoming ineffective, and I then move the stand 4 and its pulley 3 farther from the other pulleys—that is, farther toward the left-hand side of the figures—and this movement takes up so much slack that the weighted pulley Y is thereby restored to the position indicated.

I do not confine myself to the precise forms and constructions of the parts or to the materials herein shown and described. A cord of any kind may be substituted for the wire W; other winding machinery than that described in my patent of July 22, 1862, may

be used; the winding may be done at other than the point C; other cutting means than the knife D may be used; simple pins or wires or other surfaces may be used in lieu of the wheels G H, and a greater number of these surfaces differently disposed may be used; and with all these, and a great variety of additional modifications, all the effects of my invention may be realized in what I consider substantially the same way.

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

1. The employment, in chenille-machines, of the revolving sheave or wheel N, operating in combination with the cords M and Q and swivel P, substantially as herein set forth.

2. The employment, in chenille-machines, of the surface G or H, or both, to restrain the twist of the goods, substantially as herein set forth.

3. The use, in chenille-machines, of the continuous wire W, or its equivalent, arranged to operate substantially in the manner and with the advantage herein set forth.

4. The employment, in machines for making chenille, of the sheave 3, or its equivalent, arranged to operate in combination with the continuous wire or cord W, substantially as and for the purpose herein set forth.

WM. CANTER.

Witnesses:

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