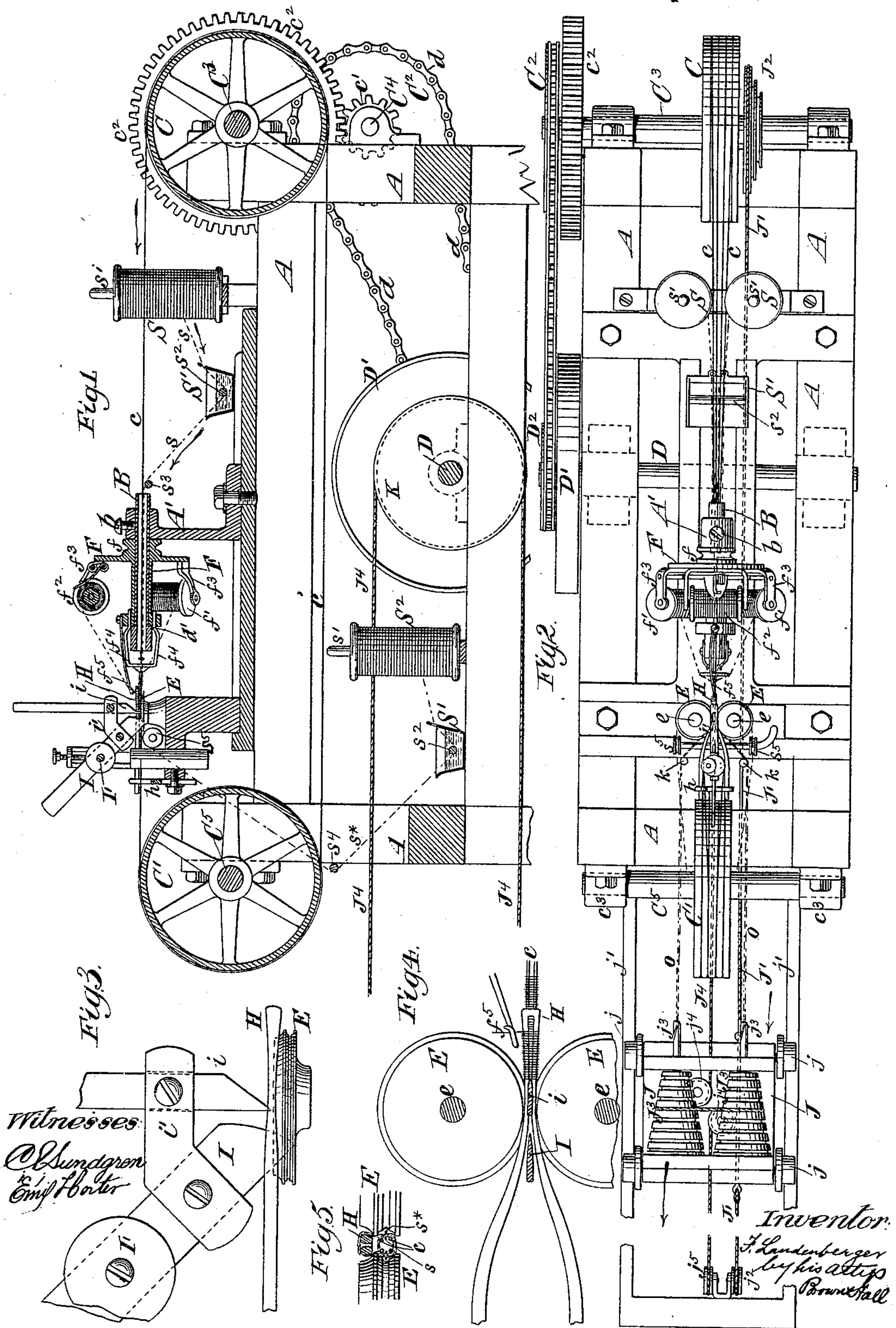


(No Model.)

F. LANDENBERGER.
MACHINE FOR MAKING CHENILLE.

No. 370,148.

Patented Sept. 20, 1887.



UNITED STATES PATENT OFFICE.

FREDERICK LANDENBERGER, OF NEW YORK, N. Y., ASSIGNOR TO HUGO MAUL & CO., OF SAME PLACE.

MACHINE FOR MAKING CHENILLE.

SPECIFICATION forming part of Letters Patent No. 370,148, dated September 20, 1887.

Application filed May 6, 1887. Serial No. 237,308. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK LANDENBERGER, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Machines for Making Chenille, of which the following is a specification.

My invention comprises a machine for making the improved chenille or fabric forming the subject of my Patent No. 368,722, dated August 23, 1887, and in which there are combined with the ordinary body fibers secured in the warp-threads other fibers which are longer than the body fibers and which project in all directions beyond the general surface of the chenille fabric.

In one machine heretofore in use for making chenille, wires and warp-threads are conducted through a hollow spindle and thence between a pair of combining-wheels to which the hollow spindle is tangential. By means of a flier rotating on the hollow spindle the filling thread or fiber is wound upon the warp-threads and wires, and on the outside of such wound warp-threads and wires are laid other warp-threads, which are conducted around the combining-wheels. By means of a suitable knife, which is set between the wires and warp-threads, the winding of said threads and wires is cut, and by twisting the warp-threads together the cut filling is secured between them and the chenille is made.

In carrying out my invention I employ a core or finger which extends parallel with the wires and warp-threads at the combining-wheels, and I employ in connection with the rotary flier an arm and guiding-eye, through which the thread from one spool on the flier may be wound around both the finger or core and the warp-threads and wires. I also combine with the aforesaid parts a second knife, which first severs the winding that embraces the finger or core and warp-threads or wires on one side only of the core or finger, and is additional to the main knife, which entirely severs the winding both above and below the warp-threads and wires. The aforesaid finger is tapered in a direction in which the finished fabric is drawn from the machine and twisted in order to facilitate the pulling forward of the winding off the core or finger and against the

supplemental knife, and in order to receive the knife the core or finger is slit or divided throughout the principal portion of its length and in a longitudinal direction.

I have in the above brief description set forth the essential elements of my invention; and the invention itself consists in novel combinations of parts, which are hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal section of such parts of a machine as are necessary to illustrate my invention, the carriage whereby the finished chenille is drawn forward from the machine and twisted being omitted. Fig. 2 is a plan of the machine, showing such carriage and twisting mechanism. Fig. 3 is an elevation upon an enlarged scale, showing one of the combining-wheels, the two knives, and the core or finger on which thread is wound. Fig. 4 is a plan view, partly in section, illustrating the parts shown in Fig. 3 and the other combining-wheel; and Fig. 5 represents a portion of the combining-wheels, together with a transverse section of the wires, warp-threads, and the finger or core on which a portion of the winding is laid, said figure being upon the same scale as Figs. 3 and 4.

Similar letters of reference designate corresponding parts in all the figures.

A designates a portion of the frame of the machine, which may be of any suitable construction, and of wood or metal.

B designates a hollow spindle, and C C drums, over which are passed wires *c*, the upper portions or members of which move in a direction indicated by the arrows in Fig. 1, passing through the hollow spindle B. The hollow spindle B may be secured by a set-screw, *b*, in a suitable support, A', and through it also pass the warp-threads *s*, two of which are taken from spools S, mounted on suitable spindles, *s'*, and conducted from thence through a box, S', containing adhesive material, under a suitable roller or bar, *s''*, in said box, and thence over a suitable guide, *s'''*.

The shaft D may be supposed to be the driving-shaft of the machine, on which is a driving-pulley, D', and from a pulley, D'', on said shaft, through a chain-belt, *d*, or other connec-

tion running upon a pulley, C^2 , motion is transmitted to the shaft C^3 , on which is the drum C for the wire. In this instance the pulley C^2 is not directly upon the shaft C^3 , but is upon an intermediate shaft, C^4 , which, by means of a pinion, c' , and a wheel, c^2 , is geared with the shaft C^3 . The drum C may be mounted upon a shaft, C^5 , rotating idly in bearings c^3 .

From the hollow spindle B the warp-threads s and also the wires c pass, in the direction indicated by the arrows in Fig. 1, between two combining-wheels, E , mounted to rotate upon vertical studs or pivots e . The form of periphery which these combining-wheels have is best illustrated in Fig. 5, and around them are conducted two other warp-threads, s^* , which are taken from spools S^2 upon spindles or supports s' , thence through a box or trough, S' , containing adhesive substance, and under a roller or guide, s^2 , and finally over rollers or guides s^4 s^5 and to and around the combining-wheels E .

Upon the hollow spindle B , and mounted thereon between a shoulder, d' , and the bracket-support A' , is a flier, F , which may be driven by a belt (not shown) passing around a whirl, f , and which carries a series of spools, $f' f^2$. These spools may be of any suitable number, and are mounted in hangers or brackets f^3 . I have here represented two spools f' , from which the thread is conducted through suitable flier-arms, f^4 , and is wound upon the warp-threads s and the wires c . Upon the flier is an additional arm, f^5 , which has at the end a guide-eye, and the thread from the spool f^2 is conducted through this guide-eye, which is in advance of the point where the threads from the spools f' are wound upon the warp-threads and wires. Immediately above the combining-wheels E , and as nearly in the same plane as possible, and parallel with the warp threads and wires, is a core or finger, H , which, as here represented, is bifurcated or split, save at its extreme front end, and is arranged in a suitable support, h . This core or finger H lies as close to the combining-wheels as possible, and through the guide-eye upon the arm f^5 the thread from the spool f^2 is taken and is wound around the core or finger H , and also around the warp-threads s and the wires c . As here represented, the finger or core H is not only divided or split longitudinally, but is tapered forward in the direction in which the wires c travel, and the draft which is placed upon the chenille, as hereinafter described, causes the winding to be readily drawn along the wires c and the taper core or finger H , and to be presented to a supplemental knife, i , which projects, as shown in Fig. 3, just below the upper surface of the core or finger H , and serves to sever the winding of the thread upon the core or finger as the same is drawn against it. In front of the supplemental knife i is a main knife, I , which is secured in a suitable holder, I' , as is usual, and has a projecting bracket or holder, i' , in which the knife i is secured. The knife I has a greater pro-

jection downward than the knife i , reaching nearly to the bottom of the combining-wheels E , and sufficiently far to sever that winding-thread which is passed from the spools f' directly upon the warp-threads s and the wires c .

J designates a carriage provided with suitable rollers, j , mounted upon a track, j' , and to which a motion in the direction of the arrow in Fig. 2 is imparted by a cord or flexible connection, J' , passing around the pulley J^2 on the shaft C^3 , and also around a pulley, j^2 , at a distant point. By the rotation of the pulley J^2 and the longitudinal movement transmitted thereby through the connection or cord J' , the carriage J is moved in the direction of the arrow shown in Fig. 2 away from the remaining portions of the machine. On the carriage J are mounted pulleys J^3 , having spindles j^3 , to which are connected the two portions of finished chenille o as they pass from the machine after the product is severed by the knife I . From a pulley, K , on the shaft D a cord or other flexible connection, J^4 , passes over suitable guide-pulleys, j^4 , and around the main cone-pulleys J^5 , as seen in Fig. 2, and thence around a pulley, j^5 , at a distant point. By this mechanism, as the carriage J moves away from the other portions of the machine, the spindles j^3 are rotated and the portions of chenille o are rapidly twisted.

It will be seen that the operation of this machine does not differ very greatly from that heretofore employed in making chenille, and the only parts which I have added to the machine are the core or finger H , the supplemental knife i , and the guide-eye which is upon the arm f^5 .

From Fig. 5 it will be observed that as the product passes between the combining-wheels E the warp-threads $s s^*$ lie on opposite sides of the winding, and a portion of such winding embraces only the wires c and the warp-threads s , while the balance of the winding which is delivered from the spool f^2 embraces the wires c , the warp-threads s , and the core or finger H . Consequently when by the knife i the winding which embraces the core or finger H is severed at the top, and when by the knife I the entire winding which embraces the wires c and the thread s is severed at top and bottom, the result is that those fibers which are formed by the winding that embraces the core or finger H are longer than those fibers which are formed by the winding which only embraces the wires c and the warp-threads s , and all these fibers are, by the twisting of the warp-threads $s s^*$, securely held in the fabric, and those fibers which are formed by the winding that embraces the core or finger H are longer or project beyond the other fibers. The two strings of finished chenille o , that are formed by the action of the knife I and the twisting-spindles j^3 , pass around guiding pulleys or studs k after leaving the combining-wheels E , and thence pass directly to the twisting-spindles j^3 .

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

1. The combination, with the combining-wheels and wires of a machine for making chenille, of bobbin supports and guides, whereby the warp-threads from spools or bobbins are
5 caused, some of them to take a direct course with the wires and others to pass around the combining-wheels, a finger or core extending parallel with the said wires at the combining-wheels, a hollow spindle through which the
10 wires and certain of the warp-threads pass, a rotary flier on the spindle adapted to receive spools, guides whereby the thread from most of the spools is wound directly upon the wires and warp-threads as they leave the spindle, a
15 guide or flier eye whereby the thread from one spool is carried forward and wound upon the finger or core and also upon the wires and warp-threads, two knives, the first having less protrusion than the second, whereby the thread
20 wound on the finger or core is cut on the one side thereof, and the thread on the wires and warp-threads is then cut above and below the said wires, and mechanism for drawing forward

and twisting the warp-threads and wires between them, substantially as herein described. 25

2. The combination, with the wheels E, the wires *c* and their supports, and the spool supports and guides, of the split and forwardly-tapering core or finger H, above the wheels
30 and parallel with the wires, the hollow spindle B, and the flier turning thereon for supporting spools *f' f''*, guides for directing and winding the thread from the spools *f'* directly upon the wires and warp-threads, a guide or flier
35 arm, *f⁵*, for directing the thread from the spool *f''* upon the core or finger and winding it around the same and around the wires and warp-threads, the two knives I *i*, and mechanism for drawing forward and twisting the
40 warp-threads and the fibers between them, substantially as herein described.

FREDERICK LANDENBERGER.

Witnesses:

FREDK. HAYNES,

HENRY J. MCBRIDE.