(No Model.)

J. J. HUGHES.

CHENILLE CUTTER BAR.

No. 445,640. Patented Feb. 3, 1891.

Fig. 1

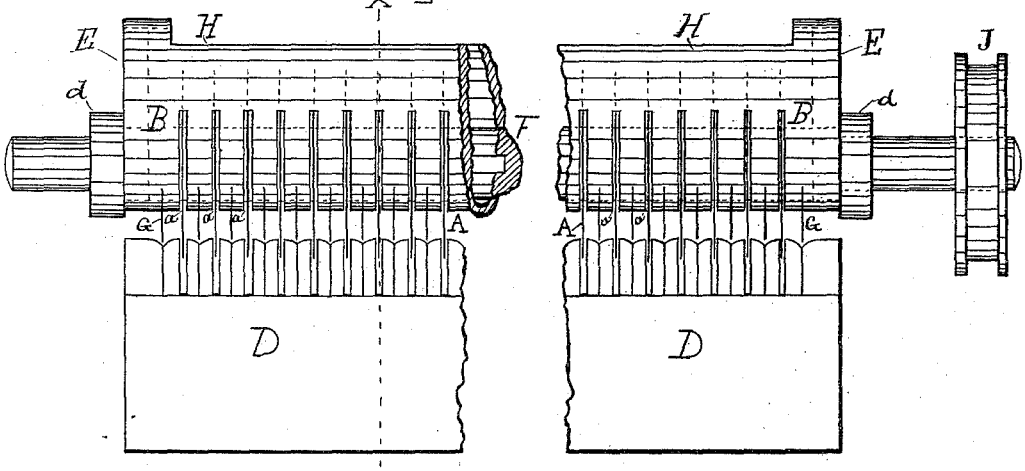


Fig. 2

Fig. 3

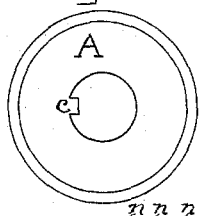


Fig. 4

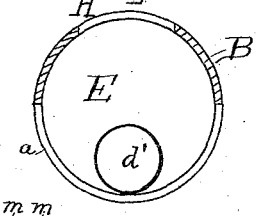
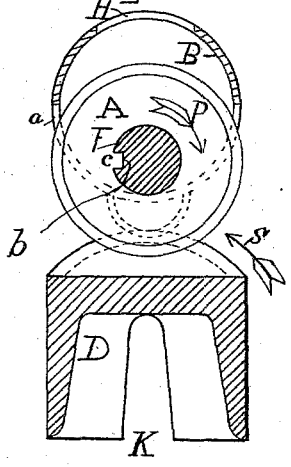


Fig. 5



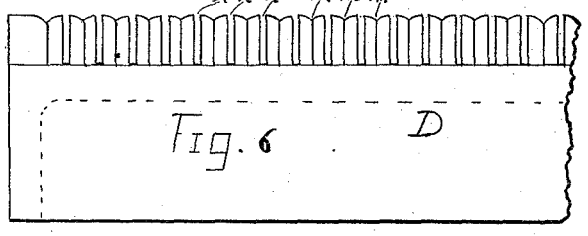


Fig. 6

Fig. 7

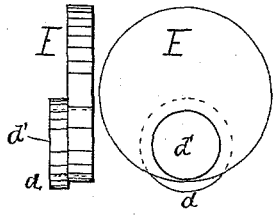
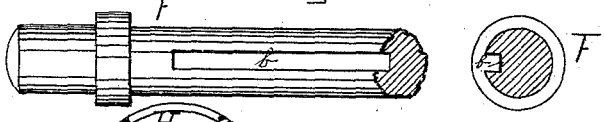


Fig. 8



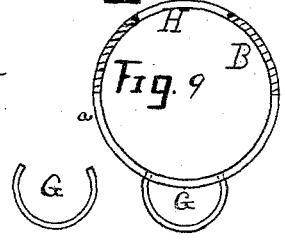


Fig. 9

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CHENILLE-CUTTER BAR.

SPECIFICATION forming part of Letters Patent No. 445,640, dated February 3, 1891.

Application filed June 9, 1890. Serial No. 354,808. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. HUGHES, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Chenille-Cutter Bars, of which the following is a specification.

My invention belongs to a class of cutting-machines known as "chenille-cutters," and relates particularly to that part known as the "cutter-bar," and is used to cut woven chenille into strips. My improved cutter-bar may also be used to cut woven fringe where a number of fringes are woven in one breadth of fabric and separated after weaving.

My improvement is especially adapted to be applied to looms and cut the chenille or fringe in the loom. It may also be applied to machines and cut the chenille or fringe on machines independent of the loom.

My invention consists in a shaft upon which is fixed a series of circular knives, in combination with a slotted tubular casing and a slotted and corrugated beam, which mechanism is fully illustrated in the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front elevation of my improved cutter-bar and corrugated beam. Figs. 2 and 3 are an edge and a face view of the circular knife. Fig. 4 is a cross-section of the tubular casing. Fig. 5 is a cross-section on line X Y of Fig. 1. Fig. 6 is a view of a portion of the corrugated beam. Fig. 7 is an edge and face view of one of the ends of the tubular casing. Figs. 8 are sectional views of the knife-shaft. Figs. 9 are views of the pressure-wire and a cross-section of the tubular casing.

Similar letters refer to similar parts throughout the several views.

A represents one of the circular knives. These knives I make of thin sheet cast-steel. The center hole is cut out by a punch so made as will leave the projection *c*. (See Fig. 3.) This projection fits the groove *b* in shaft F. (See Fig. 8.)

B is the tubular casing, which I prefer to make of "cold-drawn" brass tubing. The ends of this tubing are closed by the disks E. (See Fig. 7.) These disks may be of cast-iron. On one side at the extreme bottom they each have a hub *d*. (See Fig. 7.) These disks are fixed in the ends of the tubing B, the hubs *d* in line one with the other. The casing B has cut in the lower half a series of slots *a a* at equal distances apart to suit the length of the chenille fur to be cut. These slots are cut into the tubing crosswise to a depth of one-half the diameter and by a saw which should be a little thicker than the thickness of the steel knives. The divisions between the slots serve to keep the knives at proper distances apart. A casing B and a beam D are required for each different length of chenille fur. Some chenille is woven two strips to the inch and some eight. On the top of the casing B is cut an opening H.

F is the knife-shaft, which I prefer to make of steel. In it is cut a groove *b*. This shaft is fitted to run in the hubs *d*, and the shaft will just clear the inside bottom of the casing B. (See Fig. 5.)

D is the corrugated beam, which I prefer to make of cast-iron. The corrugated and slotted part is turned in a lathe, and the slots *n* are made to correspond with the slots *a* in the casing B.

G is a pressure-wire fixed to the casing B, one pressure-wire between each two slots *a*. (See Figs. 1 and 9.)

The operation of my improved cutter-bar is as follows: Power is by a belt communicated to pulley J. The cutters will run in direction of the arrow P and the chenille cloth in direction of the arrow S, Fig. 5. As the cloth is drawn over the beam D the warp-threads of the chenille cloth will be pressed by the wires G into the corrugations *m* when pressure-wires are used; but pressure-wires are not absolutely required, as the warp-threads of the chenille have a tendency to run in the grooves of the corrugations, and the weft-threads of the chenille cloth will be drawn across the slots *n* of beam D. In these slots run the knives A, which cut the fur threads that lie across the slots as the cloth is drawn over the beam D. The beam D is made with a slot K in each end, so that it may be adjusted, raised, or lowered to give the wires G a greater or less pressure on the cloth, as may be desired. Through the opening H a sharpening-tool may be inserted to sharpen the knives.

In applying my invention to looms the beam D may take the place of the loom "breast-

beam." The pulley J may be driven from any suitable part of the loom, or it may be driven independent of the loom. The ordinary take-up of the loom will wind the cut chenille on the take-up roller as it is woven and cut.

In applying my improved cutter-bar to chenille-cutting machines my improved cutter-bar takes the place of the knife-cylinder, using the corrugated beam and other parts of the machine as now constructed.

In chenille-cutting machines as at present constructed with cylinder and lance-shaped cutters the cylinder requires a speed of from fourteen hundred to eighteen hundred revolutions per minute. This rapid motion, if the knives be a little dull, will drag out the fibers and make considerable loss in waste.

My improved cutter-bar may be applied to the loom and run at such a slow speed as will cut the chenille as it is woven, saving waste, cost of extra machines, and the labor to attend the cutting-machine. A circular knife will make a smoother cut than a revolving lance-shaped knife, and a revolving circular knife of three inches diameter will have more than nine inches cutting-edge and a lance-shaped cutter not one-half inch. Therefore a circular knife requires less sharpening than a lance-shaped cutter, which always strikes to cut the chenille at the same point on the lance-shaped knife.

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

A chenille-cutter bar consisting of the combination of a series of circular knives, shaft F, a slotted tubular casing, and a corrugated and slotted beam, as shown and described.

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Witnesses:
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