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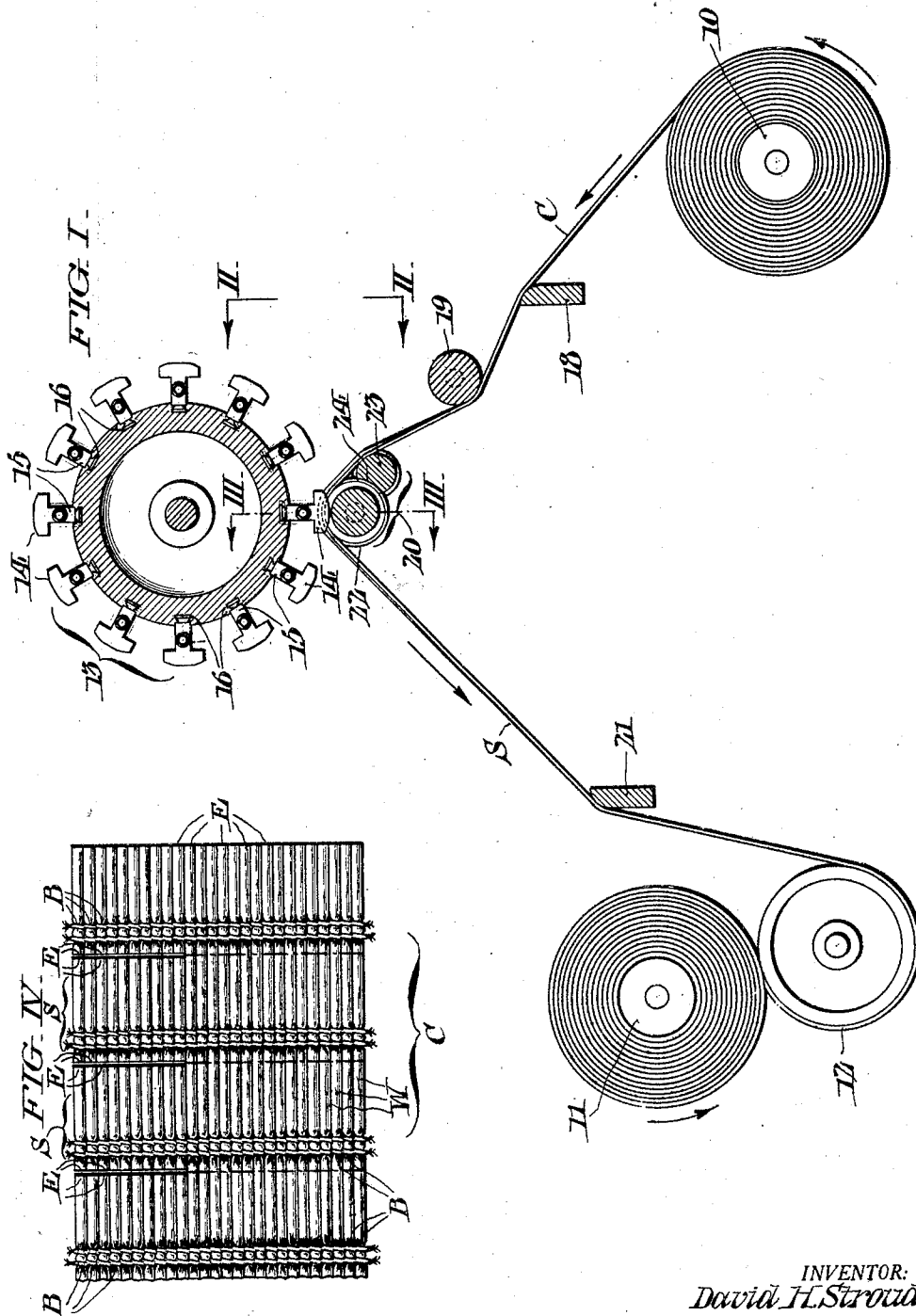
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1,844,612

CHENILLE CUTTING APPARATUS

Filed June 9, 1931

2 Sheets-Sheet 1



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FIG. II.

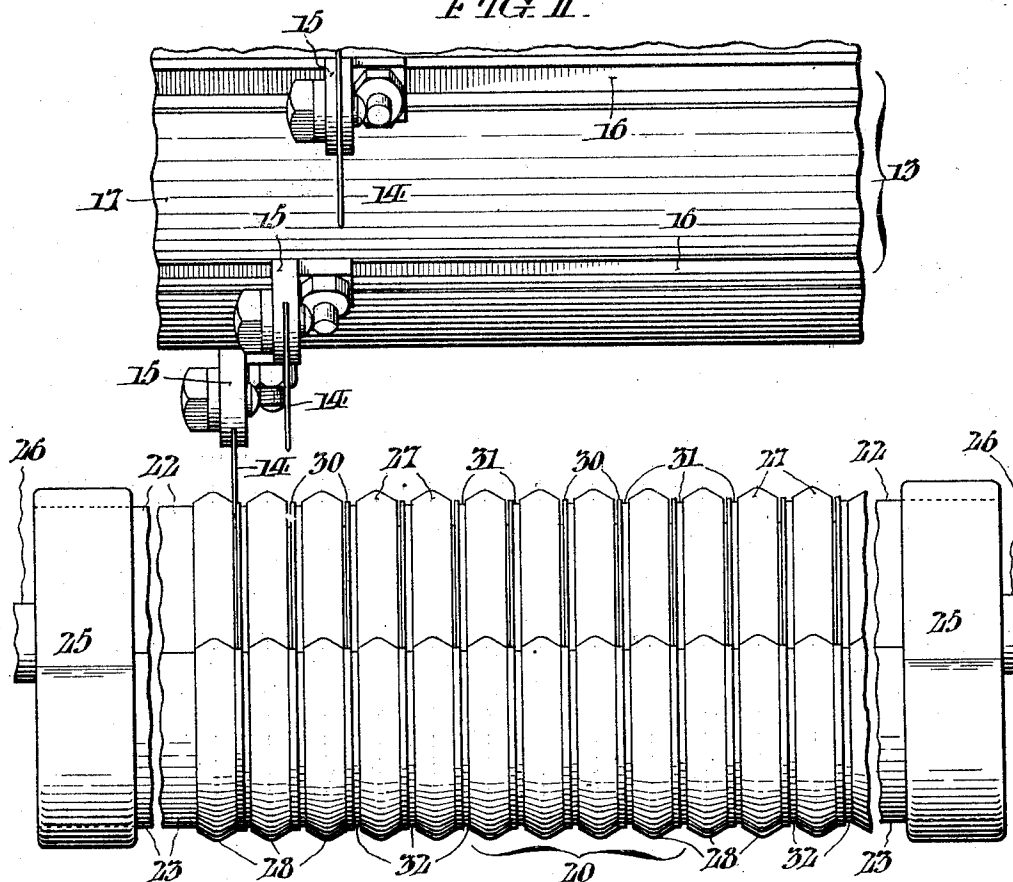
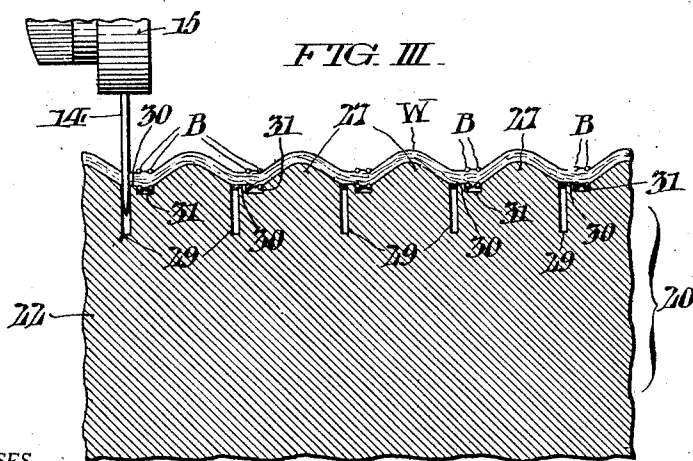


FIG. III.



WITNESSES

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CHENILLE CUTTING APPARATUS

Application filed June 9, 1931. Serial No. 543,042.

This invention relates to machines for cutting woven chenille fabric between adjacent lines of its binder wefts, thereby to divide the fabric into individual chenille strands intended to be used, in turn, as wefts incident to weaving of pile fabrics such as velvets or carpets, with the cut yarn ends of the chenille constituting the surface tufts.

More particularly, my invention has to do with the production of chenille wherein the tuft ends extend only to one side of the binder warps, as distinguished from the more common V or doubled tuft chenille where the tuft ends project to equal distances at opposite sides of the binder warps.

With ordinary cutting machines, great difficulty has been experienced in producing single tuft end chenille, due to lateral shifting of the fabric during cutting, with resultant production of chenille strands wherein the tuft ends varied considerably in length. Very often, also, the chenille strands were completely severed as a consequence of fouling of the binder warps of the fabric by the cutting knives of the machines. The latter contingency is especially serious in connection with the cutting of fabric in which the weft yarns are of different colors and definitely arranged in accordance with a preconceived design which is to characterize the pile fabrics subsequently woven with the chenille.

My invention is directed toward overcoming the above recited drawbacks of previous practice in this art, that is to say: it has for its aim the provision of a novel form of bed over which the chenille fabric is drawn for presentation to the severing instrumentalities of the cutting machine, and whereby the chenille fabric is absolutely prevented from shifting laterally through definite guidance of its binder warps relative to the cutting instrumentalities, so that a product is assured wherein the single tuft ends consistently and uniformly project to one side only of the said binder warps.

In the attached drawings, Fig. I is a longitudinal sectional view, more or less diagrammatically represented, of a chenille cutting

machine embodying the present improvements.

Fig. II is a fragmentary illustration on a larger scale viewed as indicated by the arrows II—II in Fig. I.

Fig. III is a detail sectional view, drawn to a still larger scale, taken as indicated by the arrows III—III in Fig. I; and,

Fig. IV is a view showing how the chenille fabric is cut by the machine to produce the single tuft end strands.

Referring in greater detail first to Fig. I of these illustrations, the numeral 10 designates the beam containing the supply of the chenille fabric C which is to be cut, and 11, the take-up beam on which the cut strands S of the chenille are collected, the latter beam resting by gravity on a constantly rotating drive roller 12. The rotary cutter 13 of the machine is disposed at an elevation above and in a vertical plane substantially midway between the beams 10 and 11, and, after customary practice, provided with a series of cutting blades 14 which are secured in individual holders 15 capable of spacial adjustment along the cylinder 17 in longitudinal slots 16 of the latter. Incident to passage from the supply beam 10, the chenille fabric C is directed over a stationary cross bar 18, and then under a positionally-fixed freely-revolving roller 19 enroute to the bed 20 with which the present invention is more especially concerned, and by which the chenille fabric C is presented to the rotary cutter 13. After leaving the bed 20, the cut strands S of the chenille are directed over another stationary spreader bar 21, enroute to the take-up beam 11 aforementioned.

The bed 20, it will be observed from Fig. I, is made up of two cylindric bars 22, 23 which are of different diameters, the smaller one being cut out or gouged longitudinally as at 24, to fit the curvature of the larger. These component bars 22, 23 of the bed 20 are permanently secured together at their ends, as shown in Fig. II, by straps 25 forced or sweated on, and jointly afford a bed which is substantially elliptic in cross section. Beyond the straps 25, the larger bar 22 of the bed 20 is provided with diametrically reduced ex-

tensions 26 which are adapted to be rigidly clamped with capacity for rotative adjustment of said bed, in the side frames (not shown) of the machine. From Figs. II and III it will be observed that the bars 22, 23 are respectively fashioned with uniformly-spaced angular circumferential ridges or corrugations 27 and 28, and assembled with the said ridges in exact registry. Deep grooves 29 in the horizontal circumferential surfaces 30 defining the bases of the depressions between the corrugations 27 of the larger bar 22 are penetrated by the blades 14 of the rotary cutter 13; and, immediately adjacent the grooves 29, the said bar 22 is provided with circumferential recesses 31 which have registering counterparts or continuations 32 in the smaller bar 23.

The operation of the machine is as follows:—As the lengthwise tension is induced in the binder warps B of the chenille fabric C (Figs. III and IV) under pull of the take-up beam 11, said fabric is obliged to adapt itself to the profile configuration of the bed 20 as shown in Fig. III. As a consequence, the binder warps B are caused to seek the grooves 31 of the bed 20 in the intervals between the corrugations 27, to be thereby definitely spaced and guided with respect to the blades 14 of the rotary cutter 13, while the fabric C is at the same time maintained in transverse tension with the segments of its cross threads or wefts W between the binder warps B snugly overlying the corrugations 27, 28 of the bed 20. Due to definite guidance of the binder warps B, the fabric C is prevented from lateral slippage or displacement in respect to the blades 14 of the cutter 13 so that the cross threads or wefts W of the fabric C will all be cut uniformly contiguous to the said binder warps, with resultant production of single tuft chenille in which the cut ends E are all consistently of the same length. It is to be particularly observed from Fig. I that the elliptic cross section of the bed 20 facilitates the troughing of the fabric C with obviation of strains such as would be apt to cause distortion.

Having thus described my invention, I claim:

1. In a cutting machine of the character described, a cutter with a series of laterally-spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and cooperating means to definitely guide and curvilinearly-tension the segments of the wefts between the binder warps of the fabric incident to presentation of the fabric to the cutter.

2. In a cutting machine of the character described, a cutter with a series of laterally-spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and cooperative means with circumferential ridges to trough-

ingly tension the segments of the wefts of the fabric between its binder warps and associated recessions to definitely guide the individual binder warps incident to presentation of the fabric to the cutter.

3. In a cutting machine of the character described, a cutter with a series of laterally-spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a transverse bed over which the fabric is passed for presentation to the cutter, the said bed having laterally spaced recessions for definitely guiding the binder warps of the fabric in relation to the blades of the cutter.

4. In a cutting machine of the character described, a cutter with a series of laterally spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a transverse bed over which the fabric is passed for presentation to the cutter, the said bed having grooves for penetration individually by the cutter blades, and recessions immediately adjacent the grooves for definitely guiding the binder warps of the fabric in respect to the cutter knives, thereby to accurately determine cutting of the weft threads of the fabric closely continuous to the said binder warps.

5. In a cutting machine of the character described, a cutter with a series of laterally spaced blades, adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a bed over which the fabric is passed for presentation to the cutter, the said bed having laterally spaced corrugations to tension the wefts of the fabric in the intervals between its binder warps and recessions in the hollows between the corrugations for definitely guiding the binder warps of the fabric in relation to the cutter blades.

6. In a cutting machine of the character described, a cutter with a series of laterally spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a bed over which the fabric is passed for presentation to the cutter, the said bed having laterally spaced corrugations to tension the wefts of the fabric in the intervals between its binder warps, grooves in the hollows intervening the corrugations for penetration by the blades of the cutter, and recessions immediately adjacent the aforesaid grooves for definitely guiding the binder warps of the fabric in relation to the cutter blades thereby to accurately determine cutting of the wefts closely contiguous to the binder warps.

7. In a cutting machine of the character described, a cutter with a series of laterally spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a bed over which the fabric is passed for presentation to

the cutter consisting of a pair of cylindric bars, one gouged longitudinally to fit the curvature of the other, both the said bars having aligned laterally-spaced recessions to

definitely guide the binder warps of the fabric, and one of them provided with grooves intermediate its depressions for penetration by the cutter blades.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 5th day of June, 1931.

DAVID H. STROUD, JR.

8. In a cutting machine of the character

described, a cutter with a series of laterally spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a bed over which the fabric is passed for presentation to the cutter consisting of a pair of cylindric bars, one gouged longitudinally to fit the curvature of the other, both the said bars having laterally spaced corrugations to tension the wefts of the fabric between its binder warps and recessions in the hollows between the corrugations to definitely guide the binder warps in respect to the cutter blades.

9. In a cutting machine of the character described, a cutter with a series of laterally spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a bed over which the fabric is passed for presentation to the cutter consisting of a pair of cylindric bars, one gouged longitudinally to fit the curvature of the other, both the said bars having laterally spaced corrugations to tension the wefts of the fabric between its binder warps and recessions in the hollows between the corrugations to definitely guide the binder warps in respect to the cutter blades, and one of the bars having grooves immediately adjacent its recessions for penetration by the cutter blades.

10. In a cutting machine of the character described, a cutter with a series of laterally-spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a transverse bed of substantially elliptic cross section over which the fabric is passed for presentation to the cutter, the said bed having laterally-spaced corrugations to tension the wefts of the fabric in the intervals between its binder warps, and recessions in the hollows intervening the corrugations for definitely guiding the said binder warps.

11. In a cutting machine of the character described, a cutter with a series of laterally-spaced blades adapted to divide chenille fabric longitudinally into a multiplicity of individual chenille strands; and a transverse bed of substantially elliptic cross section over which the fabric is passed for presentation to the cutter, the said bed having laterally-spaced corrugations to tension the wefts of the fabric in the intervals between its binder warps, recessions in the hollows intervening the corrugations for definitely guiding the binder warps, and grooves immediately adja-

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