T. COOPER.

CHENILLE CUTTING MACHINE.

APPLICATION FILED JULY 31, 1913.

1,102,143.

Patented June 30, 1914.

2 SHEETS—SHEET 1.

*Fig. 1.*

*Fig. 2.*

*Fig. 3.*

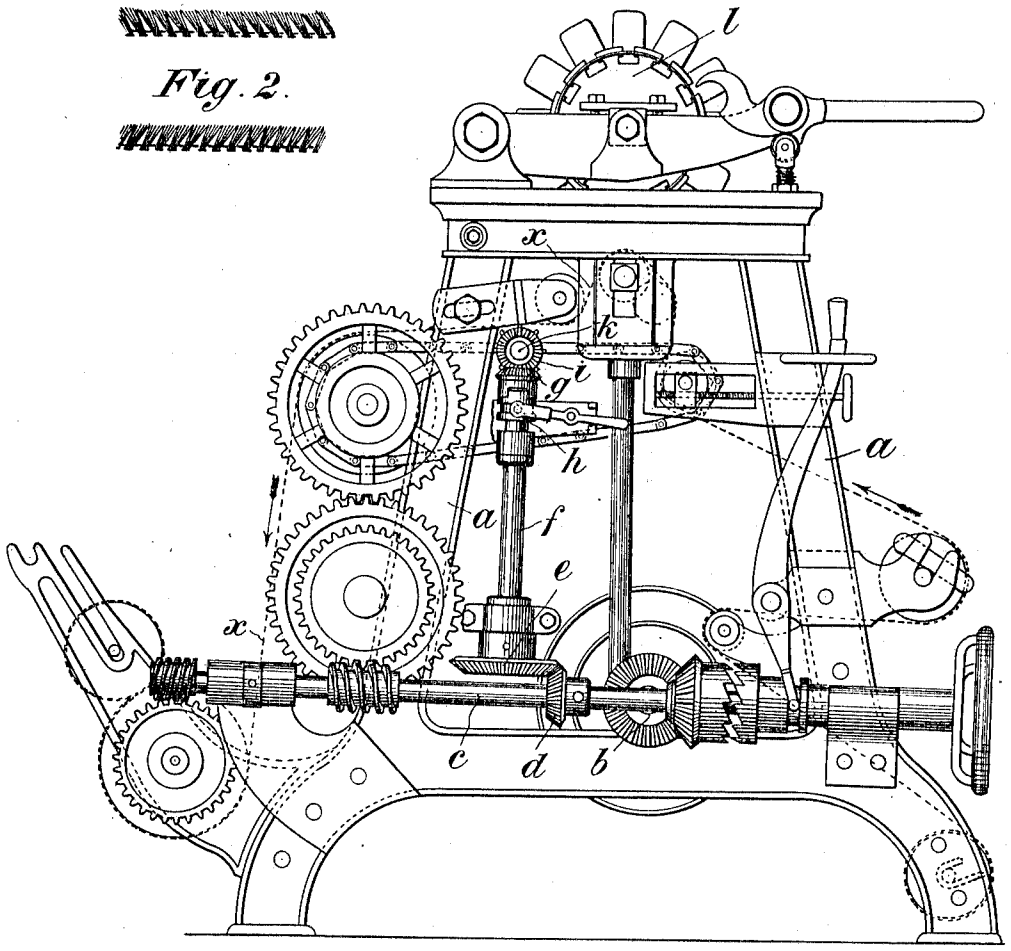



*Fig. 4.*

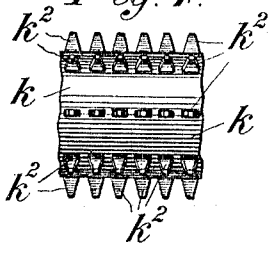
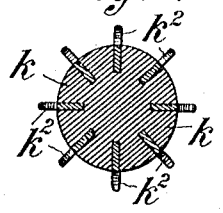



*Fig. 5.*




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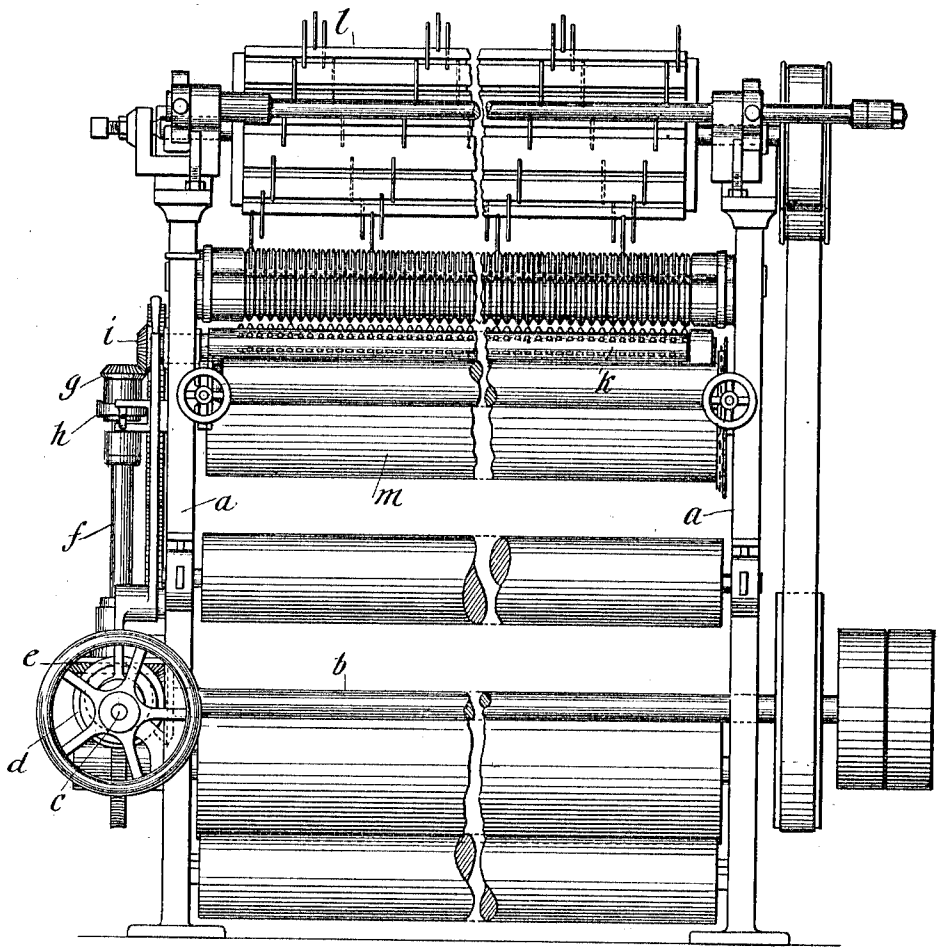
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2 SHEETS—SHEET 2.

*Fig. 6*




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# UNITED STATES PATENT OFFICE.

THOMAS COOPER, OF KIDDERMINSTER, ENGLAND.

## CHENILLE-CUTTING MACHINE.

1,102,143. Specification of Letters Patent. **Patented June 30, 1914.**

Application filed July 31, 1913. Serial No. 782,305.

*To all whom it may concern:*

Be it known that I, THOMAS COOPER, a subject of the King of Great Britain, residing at "Avondale" Hill Grove Crescent, Kidderminster, in the county of Worcester, England, have invented certain new and useful Improvements in or an Addition to Chenille-Cutting Machines, of which the following is a specification.

My invention relates to improvements in chenille cutting machines of the type described and represented in the specification of British Letters Patent No. 21366 of 1892 granted to the late William Henry Smith and myself, and it has for its object to remedy a defect in the chenille or fur cut in the said machines.

In order that my invention may be the better understood I remark that by the action of the knives of the rotary slitting cylinder of the said machine not only are the weft threads cut to form the pile, but are set backward by the drag of the knives and made to take a herring-bone-like position, which is rendered permanent by the action of the steam with which the machine is enveloped and the heat of the closing cylinder over which the chenille or fur passes to the take up roller or roll on which it is wound.

Such chenille or fur when woven into carpets and rugs is carried backward and forward through the warps; consequently the pile of successive rows of chenille or fur is inclined in opposite directions, whereby the carpet or rug is given the appearance of being made up of rows of chenille or fur of varying shades. With a view to remedy this defect it is usual to employ a boy at the back of each chenille cutting machine to brush the pile crosswise in a to and fro direction, but the defect is only partially removed by the labor referred to. According to my invention I employ a rotary comb which is rotated in such a direction and at such a speed as to bring the pile of the chenille or fur set back by the cutting knives to normal position, that is, at right angles to the warp threads.

I will further describe my invention in connection with the accompanying drawing, Figures 1 and 2 of which represent sections taken through adjacent rows of the chenille, and Fig. 3 of which represents in side elevation a chenille cutting machine of the kind described in the British patent hereinbefore referred to, to which my invention is applied. Figs. 4 and 5 represent in front elevation and cross section respectively a portion of the rotary comb constituting the essential feature of my invention. Fig. 6 is an elevation of the machine taken at right angles to Fig. 3.

The same letters of reference indicate the same parts in the several figures of the drawing.

*a*, *a* are the standards or uprights of the machine, *b* is the main shaft provided with the usual fast and loose pulleys and *c* is the secondary shaft at right angles to the main shaft *b*.

Gearing with a bevel wheel *d* on the secondary shaft *c* is a bevel wheel *e* on a vertical shaft *f*, the said shaft rotating in bearings secured to the framing of the machine in any convenient manner. At the upper end of the shaft *f* are a loose bevel wheel *g* and a sliding clutch *h* for coupling the same with the shaft *f* when said machine is running. The bevel wheel *g* gears with a bevel wheel *i* on the end of the rotary comb *k*, the bearings for which (not shown) are fixed to the standards or framing *a* of the machine. The comb *k*, a portion of which is shown in detail in Figs. 4 and 5, rotates in the same direction as that of the grooved slitting cylinder *l* carrying the usual knives, which latter are arranged in the grooves of the said cylinder in the form of a helix, but as the said rotary comb is situated under the cut fur or chenille *x* and is rotating at a speed greater than that of the fur *x*, the pile which has been set backward by the action of the knives is brought into its original position, that is to say, at right angles to the warp threads, by the action of the teeth $k^2$ of the comb; hence when the fur passes over the heated closing cylinder *m* the fur is set up perpendicularly with respect to the warp threads of the chenille.

I wish it to be understood that I do not limit myself to the exact arrangement of parts hereinbefore described as the same may be varied without departing from the nature of my invention; for example, the rotary comb can, if desired, be arranged over the chenille or fur, in which case the said comb would be rotated in a direction opposite to that of the cylinder *l* and the opposite side of the cloth would be treated.

Fur or chenille cut by my improved machine, when woven into carpets and rugs, does not produce the same cross line effect

as is obtained by the use of the patented machine hereinbefore referred to, and the surface of the carpet or rug has the same shade or color throughout when it is a self color, that is, without pattern.

Having now described my invention what I claim and desire to secure by Letters Patent is:—

The combination, with a chenille cutting machine of the type herein indicated embodying a slitting cylinder provided with a series of knives, a knife bed, and a closing cylinder; of a rotary comb disposed between said knife bed and said closing cylinder and having its teeth arranged to act upon opposite sides of the chenille strips, whereby the pile which has been deflected by the knives is brought into normal position at right angles to the warp threads before reaching the closing cylinder; and means for rotating said comb.

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

THOMAS COOPER.

Witnesses:
ARTHUR J. POWELL,
WILLIAM J. BOWKER.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**