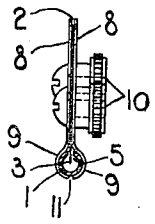
Dec. 22, 1936. K. W. JONES 2,065,185

DEVICE FOR CUTTING LOOPS OF WOOL SUCH AS ARE FORMED IN MAKING WOOL RUGS, MATS, CARPETS OR THE LIKE

Filed June 13, 1935

FIG. 2.



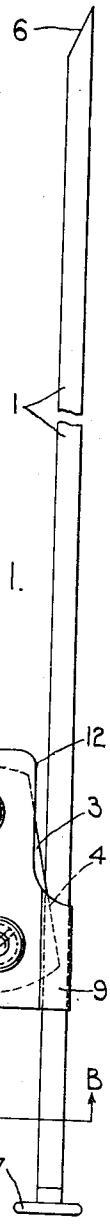


FIG. 1.

FIG. 4.

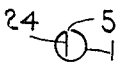


FIG. 6.

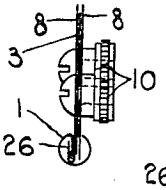


FIG. 5.

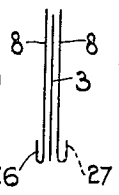


FIG. 3.

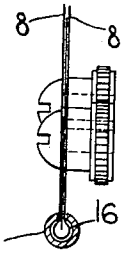
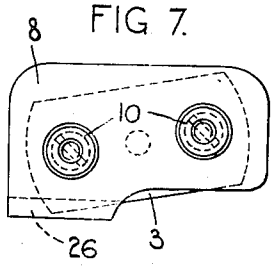
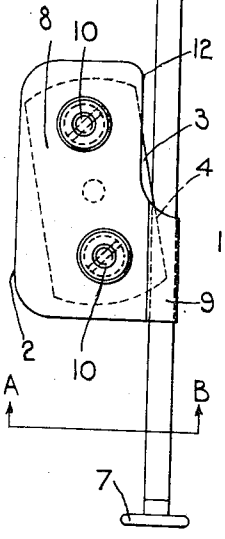


FIG. 7.





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UNITED STATES PATENT OFFICE

2,065,185

DEVICE FOR CUTTING LOOPS OF WOOL SUCH AS ARE FORMED IN MAKING WOOL RUGS, MATS, CARPETS, OR THE LIKE

Kenneth Warner Jones, Cheam, England

Application June 13, 1935, Serial No. 26,528
In Great Britain June 18, 1934

8 Claims. (Cl. 26—8)

This invention relates to a device or an implement for cutting loops of wool, cotton thread, string, or other material, such for example as the loops formed in wool used in the making of rugs, mats, carpets or the like by threading, by means of a needle, a long or relatively long piece, or a continuous length, of wool through a foundation or backing of appropriate material, such for instance as openwork canvas, Hessian, cord or other appropriate backing material, and it may be, knotting the wool to such foundation or backing.

The present invention has for its object to provide a device or implement such as will greatly facilitate and quicken the cutting of the loops, and will effectively and cleanly cut the said loops.

Several embodiments of the invention are shown in the accompanying drawing and will be described hereinafter, such embodiments having been selected from a number of possible forms of construction of the device or implement according to the invention.

In the accompanying drawing,—

Fig. 1 is a view of a loop cutter according to the preferred embodiment of the invention.

Fig. 2 is a cross section through the rod or needle like portion of the loop cutter shown in Fig. 1, the section being taken on the line A—B of that figure looking in the direction of the arrow points.

Fig. 3 is a cross section to a larger scale than Fig. 1 through a rod or needle member of the kind shown in Figs. 1 and 2 but equipped with an alternative form of blade holder.

Fig. 4 shows in cross section a further construction of rod or needle member according to the invention, the rod or needle member being formed of a strip of thin sheet metal, for example, tinplate, bent to shape.

Fig. 5 is an end view of the parts of a blade holder suitable for use with a rod or needle member of the construction shown in Fig. 4, the parts of the blade holder being shown spaced apart with a blade between them.

Fig. 6 is an end view of a blade holder as shown in Fig. 5 engaged with a rod or needle member of the form shown in Fig. 4, and

Fig. 7 is a side view of a blade holder as shown in Figs. 5 and 6 with a blade in position therein.

Referring firstly to Figs. 1 and 2, in the construction of loop cutter shown in these figures, the rod or needle member 1 is tubular and there is slidably mounted on it a blade holder 2, 3 being a wafer type safety razor blade having one of its cutting edges 4 facing the rod member 1. A relatively narrow slot 5 is machined or otherwise provided in the tubular member 1 and extends the length thereof, but preferably the member is formed of a length of strip material bent to substantially tubular form but with its longitudinal edges spaced apart to provide the slot 5. The slotted tubular member may be produced in any convenient manner, the method of its production not forming any part of the present invention. At its forward end the rod or needle member is chamfered or bevelled as shown at 6, Fig. 1, to provide a more or less pointed end to facilitate inserting the member 1 into the loops of wool to be cut. At its rearward end the member 1 is shown in Fig. 1 as being provided with a knob 7, the knob being appropriately secured to the member 1 and constituting a rearward stop for the blade holder 2.

The blade holder 2 shown in Figs. 1 and 2 consists of two pressings or stampings each comprising a plane surfaced wing portion 8 and an arcuate portion 9. The blade 3 is clamped between the wing portions 8 by bolts and nuts 10 which serve also to hold the two pressings together. When the pressings are so secured together the arcuate portions 9 form a socket or sleeve-like portion which embraces and slidingly fits the rod member 1, this sleeve or socket guiding the blade holder in its movements longitudinally of the rod 1 and preventing its disengagement from the rod by movement in a direction laterally or radially of the rod. Preferably the pressings forming the blade holder are such that when the parts are assembled the longitudinal edges of the arcuate portions 9 are spaced apart as shown at 11, Fig. 2, thus enabling these portions, if desired, to press against the surface of the rod member 1 so that the blade holder slides thereon with an appropriate amount of friction between the parts.

The pressings or stampings forming the blade holder 2 are so shaped that the guide socket or sleeve portion extends through only approximately one half of the length of the holder, the forward portions of the wings 8 of the pressings having their longitudinal edges 12 which are nearer the rod member 1 appropriately spaced from such rod member so that the wool to be cut may pass between such edges 12 and the adjacent portion of the surface of the rod member. The cutting blade 3 is disposed so that cutting edge 4 is at a suitable angle to the rod member 1, in order that in operation of the device the blade will effect a clean shearing cut. A portion of the blade depends through the slot 5 in the rod member into

the hollow interior thereof as clearly seen in Fig. 1.

In using the device for cutting loops of wool formed in making rugs of the kind hereinbefore mentioned, the rod member 1 is inserted in and picks up the desired number of loops, and whilst the rod member is held in position in relation to the foundation or backing and the loops to be cut, the blade holder is drawn along the rod member towards its forward or pointed end. The edges 12 of the wing portions 8 of the blade holder pass over the bights of the loops and locate or confine the wool to be cut in position in front of the blade the continued forward movement of the blade severing the wool. Thereafter the blade holder is returned towards the rearward end of the member 1 in readiness for the next cutting operation to be performed.

Whilst it is considered preferable to provide the blade holder with a guide portion slidingly embracing the rod member 1, if desired, the blade holder may be formed with a guide portion 16 slidingly fitting within the bore of the rod member 1 as shown in Fig. 3, such a guide member having a transverse dimension exceeding the width of the slot in the rod member and thus preventing disengagement of the blade holder from the rod member by movement of it in a direction radially of the rod. Where the blade holder is constructed in this manner it will be formed preferably of relatively thin material, such, for example, as tinplate, so as to minimize the width of the slot necessary in the rod member 1. Conveniently the blade holder shown in Fig. 3 may be formed of a single blank bent or folded on itself, the guide portion 16 being formed in the bending or folding operation. The wing portions 8 may be clamped together by two bolts as in Figs. 1 and 2, or by a single bolt.

Whilst it is considered preferable in the case of the blade holder shown in Figs. 1 and 2 to form such holder of two pressings or stampings, it is within the invention to form a holder, the guide portion of which embraces the rod member, of a single blank bent or folded upon itself. Similarly it is within the invention to form a blade holder of the kind described in relation to Fig. 3 of two stampings instead of from a single blank.

The rod or needle member of a loop cutting device according to this invention, should possess a reasonable degree of rigidity and the tubular form of rod described with reference to the Figs. 1 and 2 possesses the required rigidity whilst being at the same time relatively light. The invention is not restricted to the rod member being substantially cylindrical in cross section although this is considered preferable. The member might be square or other appropriate shape in cross section.

In order to provide a cheap and light construction of loop cutter according to the invention the rod or needle member of the loop cutter may be formed of thin sheet metal, such for example as tinplate. A strip of tinplate of appropriate width is bent into tubular form as shown in Fig. 4 with a longitudinal slot 5 along which the cutting blade will travel, and through which slot a portion of the blade will depend as in the preceding figures. In order to increase the rigidity of the rod or needle member so formed one longitudinal edge portion of the strip of which the member is made is arranged to extend across the bore of the tube as shown at 24. If desired, the other longitudinal edge of the strip may be inturned so that the cutting blade travels between relatively wide and smooth surfaces.

A rod or needle member constructed as shown in Fig. 4 could be employed with a blade holder having a socket or sleeve portion sliding on the rod such for example as the blade holder shown in Figs. 1 and 2. In the construction shown in Fig. 4, the longitudinal edge of the rib 24 is spaced from the internal surface of the tube opposite the slot 5, and a blade holder of the construction shown in Figs. 5, 6, and 7 preferably would be employed with a rod member so constructed. The blade holder shown in Figs. 5, 6, and 7 comprises two flat portions of tinplate, one of said portions having a part folded back (upturned) as clearly seen at 26 in Fig. 5. If desired, the other portion of plate may have a part similarly folded back or upturned as shown in dotted lines at 27, Fig. 5, to increase its rigidity. The blade 3 is clamped between the wing portions 8 of the blade holder by two bolts as shown in Figs. 1 and 2, or by a single bolt, in which latter case one of the wing portions 8 would have protuberances formed on it to enter holes or depressions formed in the other wing portion.

When the blade holder according to Figs. 5, 6, and 7 and rod or needle member as shown in Fig. 4, are assembled for use the holder is retained against disengagement from the rod by movement in a direction radially of the rod, as the internal rib 24 of the rod extends into the channel between the upturned portion 26 and the main part of the appropriate one of the members forming the blade holder as shown in Fig. 6, the rib also serving to guide the blade holder in its movements longitudinally of the rod.

The rod member would be bevelled or pointed at one end and preferably would be provided with a knob or handle at its other or rear end.

If desired a blade holder for use with a rod member of the construction shown in Fig. 4 might be made from a single blank or portion of sheet metal. Such a holder would be similar to that shown in Figs. 5, 6, and 7 except that the wing portions 8 would be joined along one edge of the holder, for example the forward edge or the longitudinal edge remote from the rod.

Some variations in constructional details other than those mentioned above might be made without departing from the invention. For example, a needle or rod might be reduced in cross-section for a predetermined distance from its pointed end to facilitate threading the loops on to it.

Further, if desired, the blade holder shown in Figs. 1 and 2, may be provided with a flat or plate-like member having a thickness greater than that of the cutting blade, and of suitable length, and depending into the slot in the rod member in rear of the blade, in order to keep the cutting edge of the blade away from the side walls of the slot in the rod, or, alternatively, two portions of thin sheet metal or shims may be provided, one on each side of the blade, with portions depending into the slot in rear of the portion of the cutting edge of the blade which is disposed externally of the rod.

What I claim is:—

1. A device for cutting loops of wool or the equivalent which have been formed on a foundation or backing, in making rugs or the like of the kind indicated, comprising an elongated rod member pointed at one end and adapted to be inserted in and to pick up a number of said loops, a slot extending longitudinally of said elongated rod, a cutting blade having its cutting

edge inclined in relation to and facing towards the said rod with a portion depending into said slot, a blade holder, the major portion of which forms a flat wing extending radially of the rod with its leading portion spaced from the slotted side of the rod, said wing being equipped with means clamping the blade in position in the holder, and said holder having its rear portion in the region of the trailing end of the cutting edge of the blade shaped to provide guide means engaged with said rod and freely slidable from end to end thereof and operating to restrain the holder against disengagement from the rod in a direction radially of the latter.

2. A device for cutting loops of wool or the equivalent as claimed in claim 1, wherein the rod is a cylindrical tubular member with a slot along one side, and the blade holder has plane surfaced wing portions between which the blade is gripped, positioning means for the blade, and a sleeve-like portion embracing and slidingly fitting the rod member.

3. A device for cutting loops of wool or the equivalent which have been formed on a foundation or backing in making rugs or the like of the kind indicated, comprising a rod member pointed at one end and adapted to be inserted in and to pick up a number of said loops, a slot extending longitudinally of said rod member and being open-ended at the pointed end of the rod, a cutting blade constituted by a wafer type safety razor blade and having its cutting edge inclined in relation to and facing towards the rod with a portion depending into said slot, a holder carrying said blade and having part of its rearward portion formed to provide a sleeve slidable longitudinally on said rod, and a knob at the end of the rod remote from its point constituting a stop for limiting the rearward travel of the blade holder.

4. A device for cutting loops of wool or the equivalent as claimed in claim 3, wherein the blade holder is formed of two pressings detachably secured together by the means which clamp the blade in position between plane surfaced wing portions of the pressings, each pressing having an arcuate portion constituting a part of the sleeve and said wing portions having the edges of their forward portions facing the rod member spaced from the latter and adapted to take over the wool or equivalent to be cut as the blade holder is moved towards the pointed end of the rod.

5. A device for cutting loops of wool or the equivalent as claimed in claim 1, wherein the rod is a cylindrical tubular member with a slot along one side, and the blade holder comprises plane surfaced wing portions between which the blade is gripped, blade positioning means, and a guide portion slidingly fitting within the bore of the tubular rod member and of a transverse dimension exceeding the width of the said slot in the rod member.

6. A device for cutting loops of wool or the equivalent as claimed in claim 1, wherein the rod member is tubular with a slot along one side and is formed of a strip of thin sheet metal, for example tinplate, bent to tubular form and having one longitudinal edge portion of the strip inturned and extending across the bore of the tube and approaching the wall of the tube opposite the slot, to provide a stiffening rib throughout the length of the rod member, and the blade holder is formed of thin sheet metal, for example tinplate, cut and bent to shape, one portion of the holder having a part bent back on itself or upturned to provide a channel whereby such portion of the holder can be engaged with the stiffening rib of the rod member, means being provided to position a wafer-like blade in the holder and to clamp the said blade and adjacent portions of the holder together.

7. A device for cutting loops of wool or the equivalent as claimed in claim 3, wherein the blade holder is formed of two pressings detachably secured together by the means which clamp the blade in position between the plane surfaced wing portions of the pressings, said wing portions having the edges of their forward portions facing the rod member spaced from the latter and adapted to take over the wool or equivalent to be cut as the blade holder is moved towards the pointed end of the rod, and each pressing having an arcuate portion constituting a part of the sleeve slidable on the rod, the arcuate portions being such that the opposed edges thereof are spaced apart when the parts are assembled, whereby such portions may bear with appropriate pressure on the rod to obtain a material friction between them and the rod during movements of the blade holder.

8. A device for cutting loops which have been formed on a foundation or backing, in making rugs or the like, comprising an elongated rod member pointed at one end and adapted to be manually inserted through and to pick up a number of said loops, said rod having a narrow slot extending longitudinally thereof, a blade holder having one edge formed with integral guide means engaged with the rod and manually slidable from end to end thereof, said holder projecting laterally beyond one side only of said rod and having said laterally projecting portion formed as a flat wing, the leading portion of said holder being spaced from the slotted side of the rod, a cutting blade lying flatly upon said wing with its cutting edge inclined in relation to and facing toward the rod with its trailing edge extending into said slot, means on the wing portion of the holder for clamping the blade in said position.

KENNETH WARNER JONES.