Oct. 5, 1926. 1,602,250

F. PICKARD ET AL

PILE WIRE

Filed Jan. 22, 1924

Fig. 1.

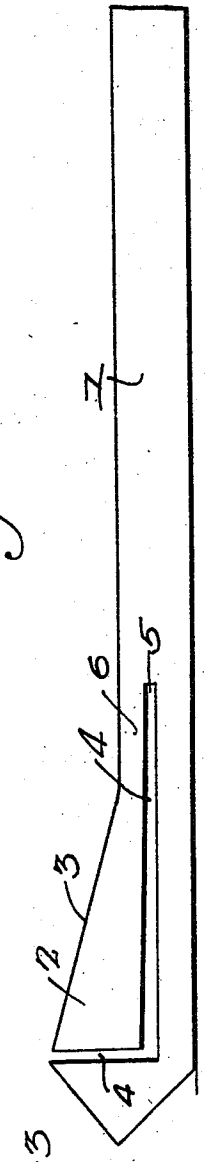


Fig. 2.

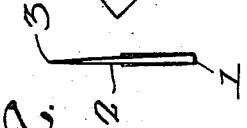
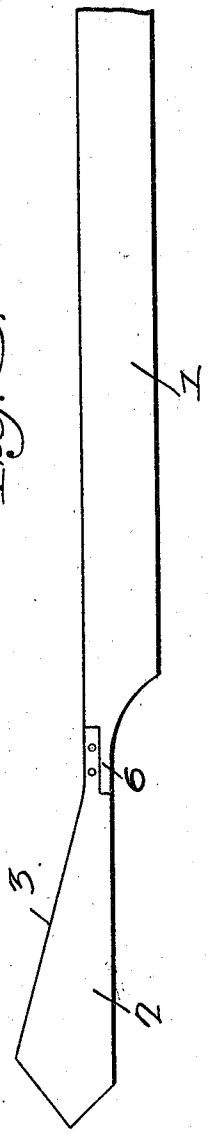


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRED PICKARD AND OLIVER J. PICKARD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO JOSEPH PICKARD'S SONS CO., OF PHILADELPHIA, PENNSYLVANIA, A PARTNERSHIP CONSISTING OF OLIVER J. PICKARD, FRED PICKARD, AND FRED A. ATKINSON, ALL OF PHILADELPHIA, PENNSYLVANIA.

PILE WIRE.

Application filed January 22, 1924. Serial No. 687,794.

Our invention relates to pile wires, and particularly to pile wires of the type used in the manufacture of velvet carpets, plush and like fabrics, and comprising a blade for cutting the loops which form the pile.

The main object of our invention is to provide a wire of this type whose cutting edge will retain its sharpness over a much longer period than will the cutting edges of pile wires of the usual construction.

The invention resides in the novel details of construction hereinafter described and illustrated in the attached drawings, in which:

Figure 1 is a side view of a portion of the pile wire made in accordance with our invention;

Fig. 2 is an end view of the wire, and

Fig. 3 is a view of a fragment of a pile wire illustrating a modification within the scope of the invention.

With reference to the drawings, the wire comprises the usual extended body portion 1, at one end of which is a portion 2 which constitutes the cutting blade. It is customary in forming the blade to increase the lateral dimensions of the wire at one end, giving this enlarged portion a sharp edge which inclines upwardly from one edge of the body of the pile wire. Under these circumstances, one edge of that portion of the wire which constitutes the blade is a continuation in the same straight line of one edge of the body of the pile wire, and rests upon the chain and stuffer ends.

In the preferred embodiment of our invention which we have illustrated in Figs. 1 and 2, we divide the blade 2 by means of a slot 4, which latter may extend downwardly from the tip or highest point of the blade to a point corresponding approximately to the longitudinal center line of the body portion 1, and from this point, we extend the slot inwardly towards the body portion and preferably to a point 5 beyond where the blade joins the body. The inner end 5 of the slot may be of lesser width than the other parts, and in the preferred form of the device, the slot may taper outwardly from the position where the blade joins the body to the angle, and from the angle, the slot may further taper outwardly towards the top of the blade. The actual dimensions and shape of this slot, however, are not important, it being only necessary that the slot be sufficiently wide to provide the necessary flexibility to the cutting portion of the blade, as hereinafter described.

It will be noted that in the aforedescribed embodiment, the operative or cutting portion of the blade is secured to the body 1 by a comparatively restricted neck 6, the cross sectional area of which is less than the cross sectional area of the main body of the wire. When, therefore, the wire is withdrawn from the loops, the latter exert a pressure against the cutting edge 3 which, by reason of the restricted neck 6, tends to and actually does flex the blade downwardly in its own plane and the plane of the wire, this having the effect of causing the loop during the cutting operation to pass over a greater portion of the cutting edge 3 than ordinarily would be the case. It will be apparent that the amount of flexure of the cutting portion of the blade may be controlled by the width of the slot 4, and the degree of flexibility of the said cutting portion of the blade may be controlled by the position of the inner leg of the slot with respect to the top edge of the body 1, the width of the neck 6 determining the degree of flexibility.

Considerable difficulty has been experienced in retaining the sharp cutting edge on pile wires of the usual construction owing to the fact that the tops of the loops when the wire is withdrawn strike the cutting edge 3 at the base of the incline and always in the same spot, the effective cutting portion of the blade accordingly being confined to that spot immediately at the base of the cutting edge. In our wire, however, by reason of the flexure of the blade in the aforedescribed manner, the effective portion of the cutting edge is materially extended. It is also preferred, as illustrated in the drawings, to make the inclined cutting edge 3 substantially straight, and this also assists in extending the effective cutting portion when the blade is flexed.

Although the aforedescribed embodiment of our invention is preferred by reason of the fact that it maintains the standardized form of the wire, we have illustrated in Fig. 2 a modification within the scope of the invention. In this instance, we remove that

portion of the wire which normally forms the bottom of the blade whereby the blade in effect constitutes an offset portion of the wire, to which it is connected by the restricted neck portion 6, whose cross sectional area is less than the cross sectional area of the main body of the wire. This construction has the effect of elevating the blade 2 above the chain and stuffer ends, so that it receives no support other than that found in the restricted neck portion 6 which attaches it to the body of the wire. In this device, we have shown the blade 2 as a separate part joined to the main body of the wire by welding or other suitable means instead of being, as in the embodiment illustrated in Fig. 1, an integral part of the wire. It is apparent that this two-part construction may also be applied to the embodiment illustrated in Fig. 1.

When this wire is withdrawn from the loops, the latter exert a pressure against the cutting edge 3 which tends to and actually does flex the blade downwardly in its own plane and the plane of the wire, this having the effect of causing the loop during the cutting operation to pass over a greater portion of the cutting edge 3 than ordinarily would be the case. The action of this blade is substantially the same as that of the blade illustrated in Fig. 1 and hereinbefore described.

The extent to which the under portion of the blade is cut away may vary, and this cutaway portion may and preferably does extend back into the body of the wire. The dimensions and form of the cut-out may be varied according to the nature of the work and conditions under which the pile wire is used, and these considerations will also determine the size and form of the slot 4 in the previously described embodiment.

In any form of the device, it is essential that the cutting portion or what in effect constitutes the cutting blade be elevated above the chain and stuffer ends, and the size of that portion of the wire which joins the cutting portion of the blade to the body must be such that the blade will flex downwardly under the loops when the wire is withdrawn.

We claim:

1. A pile wire having an upwardly projecting part at one end constituting a blade and providing a cutting edge inclining upwardly from the top edge and toward the adjacent extremity of the wire, the blade portion of the wire being undercut from its outer end and directly under the cutting edge to provide flexibility in the plane of the blade and with respect to the rest of the wire.

2. A pile wire having a straight lower edge throughout and at one end an upwardly extending part constituting a blade and providing a cutting edge inclining upwardly from the top edge and toward the adjacent extremity of the wire, the blade portion being separated from the rest of the wire by means of a slot extending at least in part longitudinally of the wire and directly under the cutting edge and being thereby flexible in the plane of the blade and with respect to the adjoining parts of the wire.

3. A pile wire having a straight lower edge throughout and at one end an upwardly extending part constituting a blade and providing a cutting edge inclining upwardly from the top edge and toward the adjacent extremity of the wire, the blade portion being separated from the rest of the wire by means of a slot extending downwardly from the upper edge and thereafter longitudinally of the wire to a point beyond the inner end of the blade and being thereby flexible in the plane of the blade and with respect to the adjoining parts of the wire.

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