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M. OTTOMANO
CUTTING PILE WIRE
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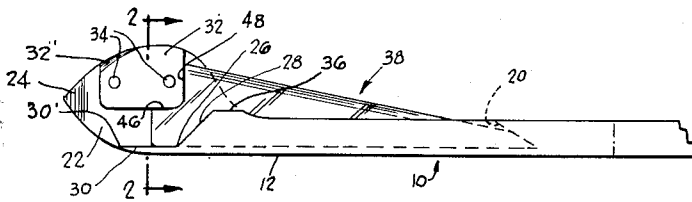


Fig. 1.

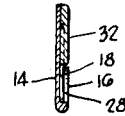


Fig. 2.

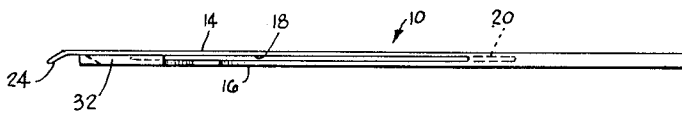


Fig. 3.

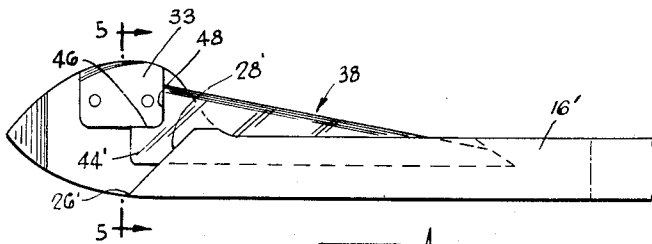


Fig. 4.

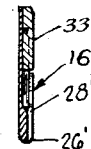


Fig. 5.

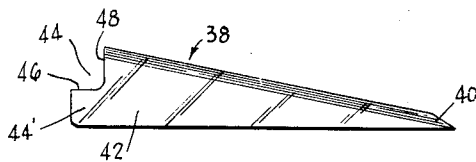


Fig. 6.

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UNITED STATES PATENT OFFICE

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CUTTING PILE WIRE

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This invention relates to pile wires and more particularly, to a novel blade holder for the same.

Conventional pile wires include a body portion which may be manufactured in various lengths and a blade holder. One trouble with the pile wires constructed in the past is that it is very difficult to attach blades to and remove blades from these holders. The blades are thus easily broken during insertion and removal, and even without such breakage it is easy for the operator to cut himself while attempting to insert or remove the blade because of the difficulty of this procedure.

Another drawback of conventional pile wire holders is their tendency to deteriorate (i. e., parts become loose) and injure the material through which the pile wire is passed.

Accordingly, it is a principal object of the present invention to provide a pile wire holder which is not subject to the foregoing disadvantages.

It is another object of the present invention to provide a pile wire holder of the character described which is capable of rigidly retaining and controlling a blade therein.

For the attainment of the foregoing and such other objects of invention as may appear or be pointed out, I have shown one embodiment of my invention in the accompanying drawings, wherein:

Fig. 1 is a fragmentary side view of a pile wire including a holder embodying the present invention;

Fig. 2 is a sectional view taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a top view of the holder shown in Fig. 1;

Fig. 4 is a view similar to Fig. 1 but showing a modified form of the present invention;

Fig. 5 is a sectional view taken substantially along the line 5—5 of Fig. 4; and

Fig. 6 is a side view of a blade adapted to be used with both forms of the present invention.

Referring now in detail to the drawings, the reference numeral 10 denotes a pile wire having a holder 12. Said holder is shown as comprised of a first wall 14 and a second wall 16, said walls being formed in any preferred manner as by folding a blank comprised of two wings to bring the wings into such juxtaposed relation that a blade receiving slot 18 is defined between the inner surfaces thereof. This slot terminates at its rear in a rearwardly inclined abutment wall 20 which provides an undercut between the walls which opens into the slot 18. The first wall has

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an enlarged spoon-like portion 22 extending beyond the second wall and terminating in a tip 24 which is bent slightly towards the plane of the second wall.

A transverse support or flange 30 extends forwardly from the bottom or end edge 28 of the second wall to underlie the spoon-like portion of the first wall to which said support is secured. The forward end 30' of flange 30 is beveled as shown. An abutment 32 is provided on the top region of the inner face of the spoon-like portion, said abutment being secured thereto as by rivets 34. The top edge of this abutment is beveled as shown as 32'. The base 26 of the end edge 28 of the second wall is disposed substantially in line with the remote end edge of the abutment, and the bottom edge of the abutment is substantially parallel to and everywhere predeterminedly spaced from the support as will appear shortly.

The second wall has portion 36 adjacent the top of the end edge 28, elevated to the line of the lower edge of the abutment. The remote end of the portion 36 tapers into the top of the wing and is beveled.

For use with said holder a blade 38 is provided, said blade being in the shape of a right triangle, one of the angles of which is very small. The narrow end 40 of the blade is disposed in the holder remote from the spoon-like portion while the lower edge of the wider portion 42 thereof rests on the support 30. The upper part of the wide portion of the blade has a recess 44 defined by a horizontal surface 46 and a vertical surface 48. Said surfaces contact the abutment when the blade is in place. The control and rigidity of the blade when in place in the holder is maintained by the support, abutment and slot 18. The distance between the remote end edge of the abutment and the remote end of the slot 18 is less than the distance between the narrow end of the blade and the vertical surface 48. Thus the blade when inserted must have its narrow end put in first so that it can project beyond the slot into the undercut of the holder. The size of the blade is such that it must be flexed in order to fit its wide end over the abutment 32 so that the surfaces defining the recess will fit against the abutment and so that the lower edge of the wide end will lie against the support. In this way the blade is snapped in place.

The purpose of the various bevelings and of the bending of the tip 24 is to avoid catching of the pile wire on the material through which it is passed. It should be pointed out that by mak-

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ing the abutment 32 occupy only a portion of the spoon-like portion there is less possibility of its working loose and injuring the fabric through which the pile wire is passed, than would be the case if the abutment were larger and had portions remote from the rivets.

The aforesaid construction and location of the abutment insures convenient access to the blade for insertion and removal purposes, the abutment not completely blocking off the wide end of the blade. Thus the structure of the present invention improves the operation efficiency of the pile wire as a whole (as pointed out in the above paragraph) and also makes it easier to insert and remove blades.

Since the abutment does not occupy much surface of the spoon-like portion, the support is provided to insure the requisite control and rigidity of the blade when in place.

The modified form of the invention which is shown in Figs. 4 and 5 is similar to the form in Figs. 1 to 3, except for two changes. The first of these is the omission of the support 30. The second is that the end edge 28' of the second wall 16' of the holder of the modified form extends beyond the remote end of the abutment 33 so that the base 26' of said edge is disposed approximately below the middle of the bottom edge of the abutment.

It will be observed that the securement of the wider end of the blade to the holder, requires only the engagement of its recess 44 with the inner bottom corner of abutment 32 and that the space in which this lip is received is open and unobstructed in the direction of the tip end of the first wall for its full height. This facilitates the removal of the blade because an instrument (or a finger) can be moved through this open unobstructed end of this space to engage beneath the lip 44' and flex it upwardly to clear it over the abutment 32.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. For use in a pile wire, a holder for removably and rigidly retaining a pile cutting blade therein, said holder being formed from a metallic blank having a first wing and a second wing, said wings being folded so as to lie in juxtaposed position with respect to each other thereby defining a slot, for a blade, said first wing having a spoon-like portion extending beyond the end of the second wing, and having its tip end slightly bent towards said second wing, the end edge of said second wing slanting downwardly away from the pile wire to its lower end and terminating at said end adjacent the inner end of a flat horizontal support positioned at the bottom of the spoon-like

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portion, an abutment disposed on the inner surface of the upper part of said spoon portion having its bottom inner corner approximately in vertical spaced apart registered relation with the lowermost end of the end edge of the second wing, and in lateral spaced apart registered relation with the topmost portion of the top edge of the second wing to provide a channel of substantial width therebetween, the bottom edge of said abutment being parallel to and uniformly spaced from said horizontal support for its full length to provide a forward extension of said aforementioned channel which is clear of obstructions whereby free access can be had to the front lower corner of an inserted blade to facilitate flexing that corner upwardly to clear it above the abutment.

2. For use in a pile wire, a holder for removably and rigidly retaining a pile cutting blade therein, said holder having a first and a second wall, said walls being in juxtaposed position with respect to each other thereby defining a slot for a blade, said first wall having a spoon-like portion extending beyond the end of the second wall, and having its top slightly bent towards said second wall, said second wall having a horizontal top edge, the end edge of said second wall slanting downwardly away from the pile wire from its top to its bottom, a separately formed abutment member affixed in close engagement with the inner surface of the upper part of said spoon portion, the bottom edge of said abutment member being on the same horizontal plane as the horizontal top edge of said second wall.

3. A holder as set forth in claim 2, wherein the top edge of said abutment member is beveled inwardly toward said second wall and downwardly toward said bent tip.

4. A holder as set forth in claim 2, wherein the end edge of said second wall extends a substantial distance beyond the end edge of said abutment remote from the spoon-like portion.

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