

(No. Model.)

C. FORD.
PILE WIRE.

No. 546,517.

Patented Sept. 17, 1895.

Fig. 3.

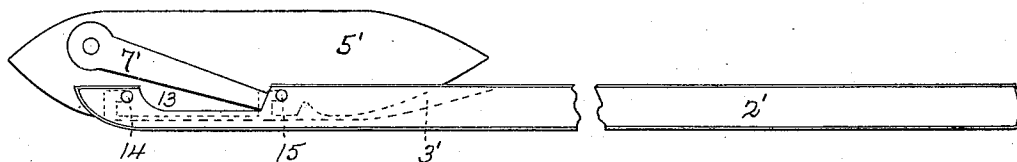


Fig. 4.

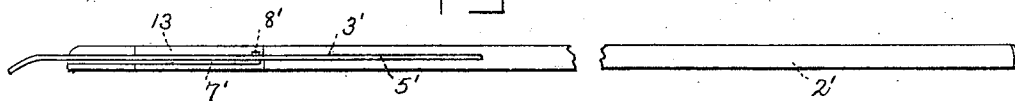


Fig. 5.

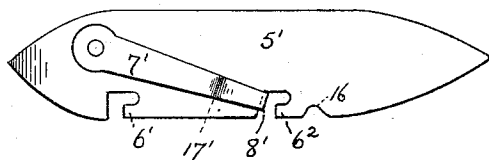


Fig. 6.

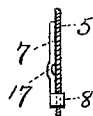


Fig. 2.

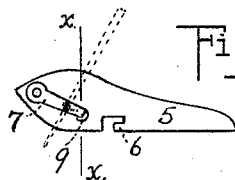
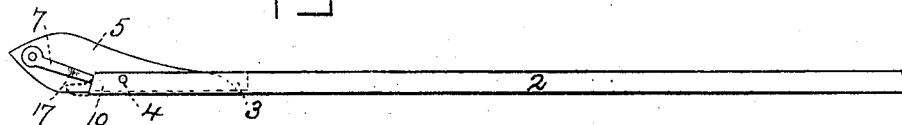


Fig. 1.



Witnesses.

Edward H. Boynton

Francis C. Hammond

Inventor.

Charles Ford.

by H. C. Lodge Atty.

UNITED STATES PATENT OFFICE.

CHARLES FORD, OF LOWELL, MASSACHUSETTS.

PILE-WIRE.

SPECIFICATION forming part of Letters Patent No. 546,517, dated September 17, 1895.

Application filed April 19, 1895. Serial No. 546,433. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FORD, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Pile-Wires; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates to "pile-wires," so called, which are employed in the manufacture of pile fabrics.

The purpose of my invention is to provide a wire with a removable or detachable blade and which may serve by interchanging of said blades to produce either a bottom or a top cut, the distinction being that in a top cut the blade acts to sever the loop or pile from the outside inwardly, while the reverse action takes place with a bottom cut. Hence, when the pile-wire is equipped with a blade for a top cut the cutting-edge converges toward the wire, whereby the pile is crowded down between the upper surface of the wire and the cutting-edge of the blade. Under these conditions the slot in the upper or top surface of the wire in part and adjacent to the sharpened edge of the blade projects beyond, in order to allow said cutting-edge to extend below and into the wire unimpaired.

The chief features are embodied in a pile-wire slotted or grooved in part at one end, combined with a cutting-blade notched to engage the wire, said blade being apertured to receive the free end of a finger arranged to abut against the pile-wire and prevent disengagement of the blade from the wire.

The drawings accompanying this specification represent, in Figure 1, a side elevation of a pile-wire for a bottom cut embodying my invention. Fig. 2 shows the blade disengaged. Fig. 3 is a side elevation of a pile-wire adapted for a top cut, the end of the wire being slightly modified to enable double engagement of the blade with the wire. Fig. 4 is a top edge view of the construction in Fig. 3. Fig. 5 is a side

view of the blade for a top cut removed from the wire. Fig. 6 is a cross-section of the blade in Fig. 2 on line *x x*.

In said drawings, 2 represents the wire proper, composed of a slender steel bar rectangular in cross-section and at its rear end squared or with an extension. (See dotted lines in Fig. 1.) This extension is in the form of a short lip or projection and may be considered as a prolongation of the under side of the pile-wire, thereby affording a longer base or support to the blade. The rear end is moreover formed with a slot or groove 3, created by the removal of a portion of the material composing the wire. Transversely across the slot near the end of the wire is inserted a retaining bar or pin 4, while a blade 5 is removably positioned in the slot. This blade here shown in Fig. 1 is adapted for a bottom cut and is of the usual shape. In the lower edge of the blade is cut a right-angled notch or inverted L-shaped opening, which forms a fastening device or prong 6. This prong is intended to interlock with the pin 4. The blade consists of a thin sheet of steel, the top cutting-edge of which converges toward the front extremity. At the rear and upon one side of the blade is a locking device or finger 7, the free end of which terminates in a hook or lateral offset 8, arranged to enter an opening 9 in the body of the blade. When the blade is properly positioned in the slot, the end of the finger rests against the rear extremity of the wire and projects through or into the blade and no sliding movement of the blade can occur. This prevents disengagement of the prong 6 from the pin 4, and the blade continues rigidly attached to the pile-wire.

One of the advantages of my invention consists in the fact that the wire is a single straight bar and merely comprises the slot and the transverse pin, both of which can be easily made. In attaching the blade the latter is aligned above the slot with the mouth of the L-notch above the pin, while the free end of the finger is held raised or forcibly pushed sidewise away from the blade to allow the side wall 10, which in part forms the slot, to pass freely beneath the offset 8. The

blade is now pressed down until the pin has reached the top of the L-notch. When the blade is pushed rearwardly, the prong 6 passes beneath the pin which reaches the end of the notch and further movement in this direction is thus prevented. The relative positions of the parts are then such that the aperture or opening 9 is just clear of the end of the wire, and release of the finger permits the offset portion to enter said opening, while the terminal portion of the finger rests against the end of the pile-wire. The finger now lies snugly against the blade and prevents any forward movement, whereby said blade can be disengaged from the wire, while its position allows the wire to pass freely along when the pile is to be cut.

The above description applies particularly to a pile-wire adapted to produce an under or bottom cut. In the application of my invention to a pile-wire intended for a top cut I proceed as follows: In lieu of terminating the rear end of the wire, as in Fig. 1, the material is extended and an aperture 13 is created, the central longitudinal slot being the same in both instances. Transversely of said wire 2 at the upper corners of said aperture are inserted two pins 14 15. The blade 5 is pointed at both ends, while the under front edge is the knife portion. In the lower edge of the blade are formed two L-shaped openings similar to that in Fig. 2, the prongs 6' 6" formed thereby being adapted to interlock, respectively, with the pins 14 15, before mentioned.

When the blade is properly positioned it will be observed that the slot 3' is continued out beyond the meeting angle of the blade with the top surface of the wire. In this way the knife portion or cutting-edge extends unimpaired below the top surfaces of said wire, and when the loops of fibrous material are forced beneath the knife portion of the blade they are sure to be properly and cleanly severed, since the cutting-edge of the blade extends below the point beyond which said threads cannot pass. Sprouting is thus obviated. In the construction of this type of blade I have created a notch 16 which serves to define the cutting-edge and separates the latter from the adjacent prong. Hence, in applying the knife to a sharpening-tool, less liability occurs of the grinding action being extended to said prong, which would be weakened thereby. To provide for easy and ready removal of the blade, I have formed a rise or bend 17 in the finger, through which a wire or pin may be passed, and thus lift the finger from the side of the blade and disengage the offset 8 from the pile-wire. The application

of said wire is indicated by the broken lines 60 in Fig. 2.

In Fig. 3 the several parts perform the identical functions as in Fig. 1, and the finger 7', with its offset 8', is adapted to engage and enter transversely of the blade, while the rise or bend 17' permits of the entrance of a wedge to release the finger when the blade is to be taken out.

What I claim is—

1. The combination with a pile wire slotted longitudinally in part, and a pin transversely of the slot, of a removable blade, a holding prong upon the lower edge of said blade to engage the transverse pin, and a device carried by the blade to prevent forward movement of said blade and its consequent disengagement from the wire, substantially as explained.

2. In combination with a pile wire slotted longitudinally in part, and a pin transversely of the slot near the rear end of said wire, a removable blade fitted with a holding device upon its lower edge, and a spring finger adapted to engage the pile wire and enter a transverse slot in the blade, substantially as described.

3. The combination with a pile wire slotted in part, and a pin transversely of the slot, of a removable blade having a prong upon its lower edge to engage the pin, a spring offset finger on the blade to engage the wire, and an aperture in the blade to receive the offset on the finger, substantially as set forth.

4. In combination with a pile wire slotted in part, a plurality of transverse pins, and an aperture at the rear end of said wire, a removable blade, prongs forming part of said blade to engage the pins, and a spring catch carried by the blade and adapted to engage the pile wire to prevent sliding movement of the blade, substantially as herein set forth and stated.

5. The combination of a blade having fastening devices along the lower part thereof, a wire slotted in part to receive said blade and provided with a shoulder, transverse pins at the rear end portions of the wire, and a spring catch having a lateral offset which contacts against said shoulder in the wire and extends through the blade, all operating, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES FORD.

Witnesses:

CHARLES R. BLAISDELL,
JOSEPH F. SLATER.