

No. 790,016.

PATENTED MAY 16, 1905.

W. WATTIE.
PILE FABRIC LOOM NEEDLE OR WIRE.
APPLICATION FILED MAY 18, 1904.

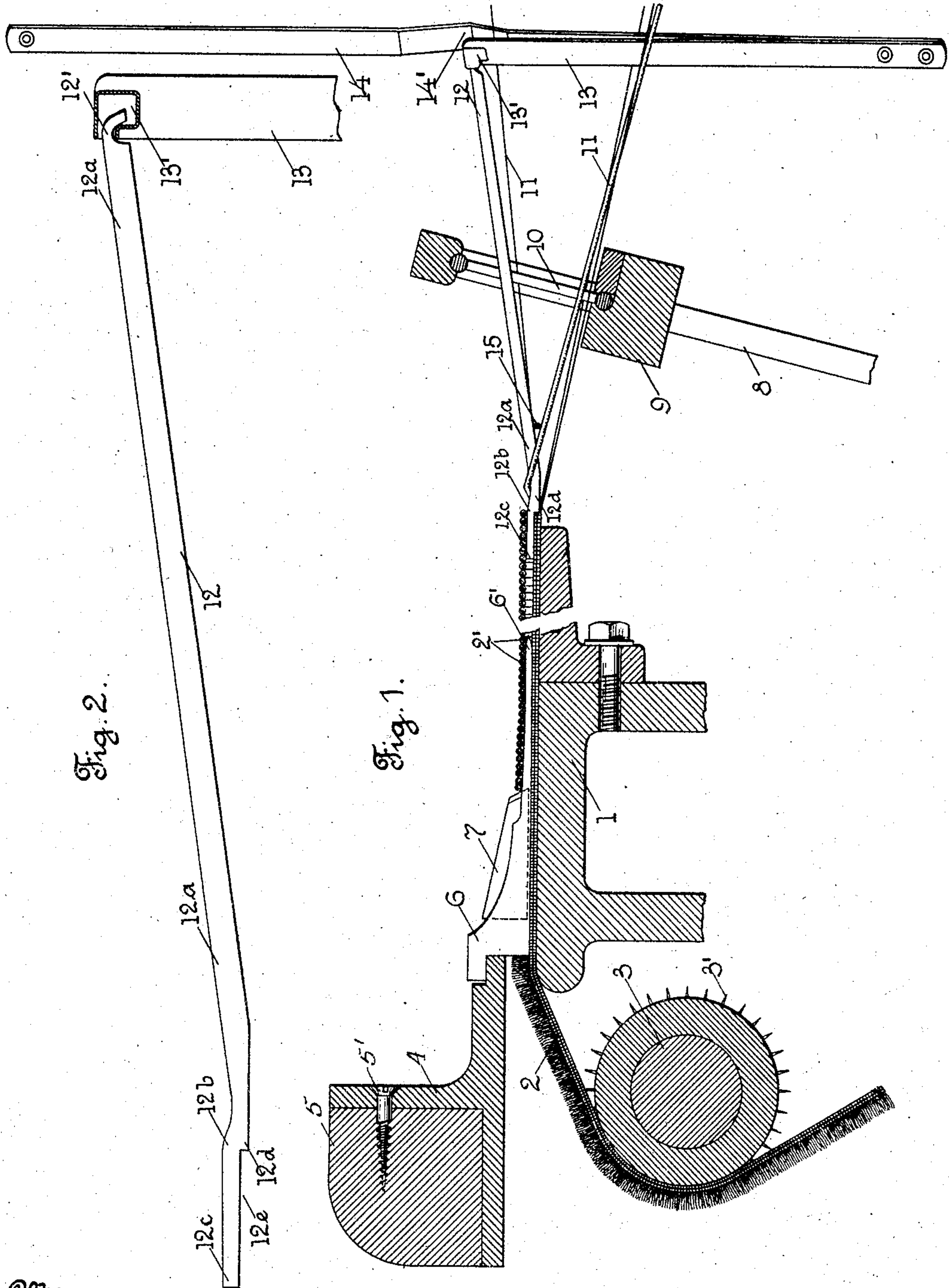


Fig. 2.

Fig. 1.

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UNITED STATES PATENT OFFICE.

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PILE-FABRIC-LOOM NEEDLE OR WIRE.

SPECIFICATION forming part of Letters Patent No. 790,016, dated May 16, 1905.

Application filed May 18, 1904. Serial No. 208,502.

To all whom it may concern:

Be it known that I, WILLIAM WATTIE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Pile-Fabric-Loom Needles or Wires, of which the following is a specification.

My invention relates to pile-fabric looms, and particularly to the needles or wires in that class of pile-fabric looms in which the needles or wires extend in the direction of the length of the fabric.

The object of my invention is to improve upon the construction of the pile needles or wires in the class of looms referred to as ordinarily made, and more particularly to improve upon the construction of the pile needles or wires shown in United States Letters Patent No. 758,968. In said patent the end of the needle over which the pile-loops are formed is of substantially uniform thickness or height throughout its length, so that the loops are not drawn tight as they are moved along on the end of the needle by the beating up of the lay, and, further, the needle by reason of the smooth surface on its lower edge at its free end is liable to have a forward endwise movement into the pile-loops.

In my improved construction of the pile-needle I provide an upward incline on the needle intermediate the main portion of the needle and the end over which the loop extends, so that after a loop is formed the beating up of the lay will move the loop up said incline and onto the higher upper edge of the end of the needle. The movement of the loop up the incline draws the loop tight and makes a closer and more compact pile.

In my improved needle I also provide a recess on the lower edge of the needle, forming a projection at the inner end of the portion over which the pile-loops extend. As the filling-thread is beaten up by the lay it passes over this projection and into the recess and engaging the projection acts to hold the needle and prevent any forward endwise movement thereof.

I prefer to detachably connect the inner end of my improved needle with its supporting-blade instead of permanently attaching it thereto, as shown in said Patent No. 758,968.

I have only shown in the drawings sufficient parts of a pile-fabric loom of the class referred to with my improvements combined therewith to enable those skilled in the art to which my invention belongs to understand the construction and operation thereof.

Referring to the drawings, Figure 1 is a longitudinal sectional view showing the upper part of the lay, the reed, the loop-cutting mechanism, and other parts with my improved pile-needle combined therewith and corresponding to Fig. 8 of the drawings in said Patent No. 758,968; and Fig. 2 shows, on an enlarged scale, a needle of my improved construction and the upper end of its supporting-blade, partially in section.

In the accompanying drawings, 1 is a portion of a supporting plate or table attached to the loom-frame (not shown) and upon which the woven-pile fabric 2 is supported and over which it passes to the take-up roll 3, provided with pins 3' in the usual way. At the front of the plate 1 is a stationary plate or bar 4, which extends transversely across the loom and is secured to the loom-frame. (Not shown.) A bar 5 is secured to the front of the plate 4 by screws 5'.

Extending loosely along the inner edge of the plate 4 are the loop-cutter holders 6, (only one is shown,) having reduced pointed ends 6', which extend into the pile-loops 2'. The holders 6 carry the cutters or knife-blades 7, the sharpened inner ends of which engage and cut the pile-loops as the woven fabric moves over the plate 1, drawn along by the take-up roll 3.

The lay-sword 8 carries the lay 9, having the reed 10 thereon. The warp-threads 11 pass through the reed 10 to form the woven fabric and the loops thereon in the usual way.

All of the above-mentioned parts may be of the same construction as and correspond

to similar parts shown and described in said Patent No. 758,968.

I will now describe my improved pile-needle.

5 My needle 12 is preferably made of sheet metal of flat-blade shape; but it may be made of wire of round or other shape, if preferred.

The needle 12 is preferably detachably connected to the upper end of its supporting-
10 blade 13, which is attached at its lower end to an upright strip or bar 14, having in this instance therein an offset 14'.

The needle 12 preferably has a hook-shaped end 12', which extends into a pocket 13' at
15 the upper end of the blade 13 and detachably connects the needle 12 with the blade 13 and allows of a pivotal motion of the needle in a vertical plane.

The needle 12 has its main portion 12^a
20 preferably of substantially the same thickness or height throughout its length as shown. At the end of the main portion 12^a there is an upward incline 12^b on the upper edge of the needle leading to the straight
25 and horizontal upper edge of the free end 12^c of the needle, over which the pile-loops extend. The lower edge of the end 12^c of the needle 12, over which the pile-loops extend, is recessed or cut out to form a projection 12^d.
30 As the lay beats up the pile-loop 21 is moved up the incline 12^b on the needle 12, and said incline acts to draw the pile-loop tighter to make a closer and more compact pile. The filling-thread 15 passes by the projection 12^d
35 into the recess 12^e and the projection 12^d engages the filling-thread and acts as a stop to prevent any forward endwise movement of the needle 12.

It will be understood that the details of
40 construction of my improvements may be varied, if desired, and my needle may be used in connection with any ordinary construction of pile-fabric loom of the class referred to.

Having thus described my invention, what
45 I claim as new, and desire to secure by Letters Patent, is—

1. A needle for a pile-fabric loom of the class referred to, having a recess on its lower

edge at its free end, forming a projection to engage the filling-thread, substantially as
50 shown and described.

2. A needle for a pile-fabric loom of the class referred to, having an upward incline on its upper edge, intermediate the main portion and the end over which the pile-loops extend, and a recess on its lower edge at its free end, forming a projection to engage the filling-thread, substantially as shown and described.

3. In a pile-fabric loom of the class described, the combination with an upright strip or bar, of a needle detachably connected therewith, and having an upward incline on its upper edge, intermediate the main portion and the end over which the pile-loops extend, substantially as shown and described.

4. In a pile-fabric loom of the class described, the combination with an upright strip or bar, of a needle detachably connected therewith, and having an upward incline
70 on its upper edge, intermediate the main portion and the end over which the pile-loops extend, and a recess in its lower edge at its free end, forming a projection to engage the filling-thread, substantially as shown and described.

5. In a pile-fabric loom of the class described, the combination with an upright strip or bar, of a needle pivotally connected therewith, and having an upward incline on its
80 upper edge, intermediate the main portion and the end over which the pile-loops extend, substantially as shown and described.

6. In a pile-fabric loom of the class described, the combination with an upright strip
85 or bar, of a needle pivotally and detachably connected therewith, and having an upward incline on its upper edge, intermediate the main portion and the end over which the pile-loops extend, substantially as shown and described.

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Witnesses:

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