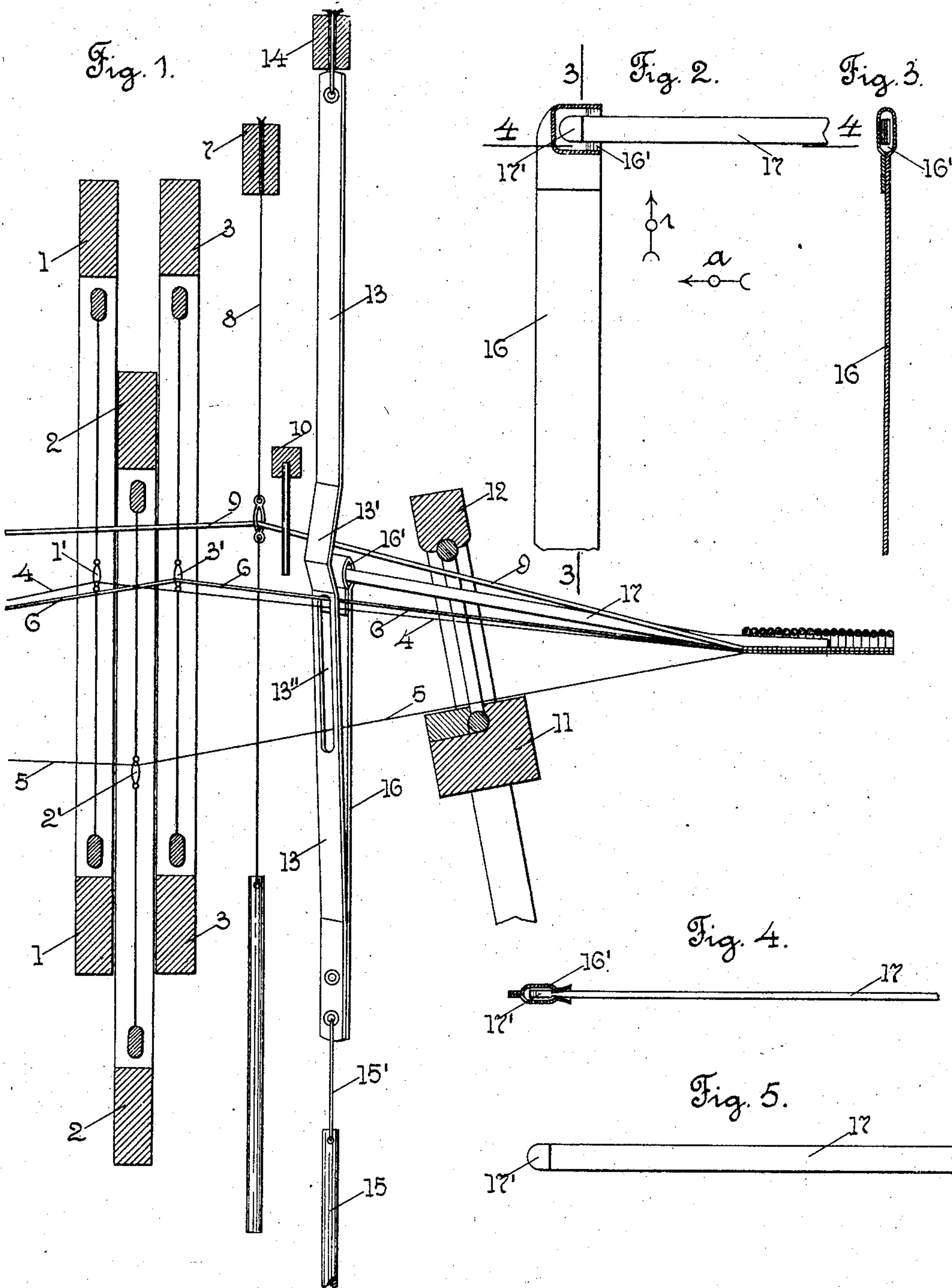


No. 790,028.

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J. BUCKLER.  
PILE FABRIC LOOM.  
APPLICATION FILED JUNE 6, 1904.



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# UNITED STATES PATENT OFFICE.

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## PILE-FABRIC LOOM.

SPECIFICATION forming part of Letters Patent No. 790,028, dated May 16, 1905.

Application filed June 6, 1904. Serial No. 211,277.

*To all whom it may concern:*

Be it known that I, JAMES BUCKLER, 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 Looms, of which the following is a specification.

My invention relates to looms for weaving pile fabrics, and more particularly to that class of looms shown and described in my United States Letters Patent No. 747,587, in which the pile-wires extend in the direction of the length of the fabric.

The object of my invention is to improve upon the construction of some of the parts of my mechanism, shown and described in said patent, and more particularly the construction of the upright heddles or guide-strips carrying the blades supporting the pile-wires, and also to improve upon the connection of the pile-wires to the blades.

In my patented improvements the pile-warp forming the pile-loops is raised and lowered and carried first to one side and then to the other side of the longitudinal pile-wires to form the pile-loops. The binder-warps and the stuffer-warps are carried in harnesses, which are raised and lowered to form the shed.

I have found in practice that the binder-warp threads and the stuffer-warp threads may be lifted too high and carried over the pile-wires. This interferes with the proper operation of the pile-forming mechanism and produces imperfect fabric.

In my present improvements I have provided means for preventing the lifting of the binder-warp threads and the stuffer-warp threads high enough to be carried over the pile-wires. I accomplish this by making a longitudinal slot in the upright or guide strip between the pile-wires and having the binder-warp threads and the stuffer-warp threads pass through said slot. The binder-warps and stuffer-warps pass through the harnesses in the usual way and are raised and lowered with said harnesses; but they are prevented, by engaging with the upper end of the slot, from being lifted high enough to be carried over the pile-wires. I have also found in

practice that it is desirable not only to have the pile-wire have a pivotal motion in a vertical plane, as shown and described in my said patent, but also to so connect it with its supporting-blade that it may be readily detached therefrom by drawing it out in a substantial straight direction without raising or lowering the pile-wire, all as will be hereinafter fully described.

I have only shown in the drawings sufficient portions of a detached section of a loom of the class described embodying my improvements to enable those skilled in the art to which my invention belongs to make and use the same.

Referring to the drawings, Figure 1 is a detached sectional view of the harnesses, the lay, and my improvements combined therewith, corresponding to Fig. 3 of my said Patent No. 747,587. Fig. 2 shows the upper end of the blade supporting the pile-wire and a portion of the pile-wire attached thereto. Fig. 3 is a section on line 3 3, Fig. 2, looking in the direction of arrow *a*, same figure. Fig. 4 is a horizontal section on line 4 4, Fig. 3, looking in the direction of arrow *b*, same figure; and Fig. 5 shows the attaching end of the pile-wire. Figs. 2 to 5, inclusive, are on enlarged scale.

In the accompanying drawings are shown three harness-frames 1, 2, and 3, provided with heddles 1', 2', and 3', which carry the two binder-warps 4 and 5 and the stuffer-warp 6. The harness-frames and heddles have a vertical motion in the usual way to raise and lower the warps to form the shed.

A transverse bar 7 has a vertical motion communicated thereto and has connected therewith a series of cords 8, which form the heddle-cords for the pile-warps 9.

10 is a comb which has communicated thereto at regular intervals a transverse reciprocating movement to carry the pile-warps, which are moved up between the teeth of said comb by the raising of the bar 7 over one side or the other of the pile-wire to form the pile-loops, all as fully shown and described in said Patent No. 747,587.

The lay 11 carries the reed 12, between the



dents of which pass the binder-warps, the stuffer-warps, and the pile-warps.

I will now describe my improvements.

13 is the heddle or guide-strip corresponding to the heddle or guide-strip 14 of said Patent No. 747,587. The guide-strip 13 preferably has an offset or bend 13' therein and is connected at its upper end with a transverse horizontal bar 14. The lower end of the guide-strip 13 has a weight 15 thereon attached by cords 15'. It will be understood that there are a series of guide-strips 13.

In each guide-strip 13 is a vertical longitudinal slot or opening 13'' of a length a little greater than the opening of the shed, as shown. Through the slot 13'' extend the binder-warps and preferably the stuffer-warps also.

The lower end of the guide-strip 13 has in this instance attached to it the lower end of the pile-warp-supporting blade 16. The upper end of the blade 16 is preferably made, as shown, with the pocket 16' formed therein to receive the inner end of the pile-wire 17. The pile-wire 17 at its inner end is preferably reduced in thickness to form vertically-extending shoulders 17'. The inner end of the pile-wire 17 is pushed into the pocket 16', so that the shoulders 17' will extend within the bent front edges of the pocket, as shown in Fig. 4. By this construction the pile-wire is pivotally connected with the upper end of the supporting-blade 16 and is also detachably connected therewith and may be disengaged therefrom by drawing it out in a substantially straight direction.

The advantages of my improvements will be readily appreciated by those skilled in the art.

By means of the slot in the guide-strips between the pile-wire-supporting blades I prevent the binder-warps and also the stuffer-warps, if they extend through said slot, from being raised above the upper ends of the pile-wire-supporting blades and also prevent them from being carried over the pile-wires.

By means of the construction of the upper end of the pile-wire-supporting blades and of the pile-wires I provide a pivotal connection

and also a detachable connection for the pile-wire without moving the pile-wire up or down.

It will be understood that the details of construction of my improvements may be varied, if desired.

I have shown in the drawings both the binder-warps and the stuffer-warps passed through the slot 13'' in the upright strip or guide 13; but only the binder-warps may be passed through said slot, the stuffer-warps being on the outside of the guide 13, if preferred.

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

1. In a loom of the class described, the combination with a pile-wire-supporting blade, of a guide-strip having a slot or opening therein for the binder-warps to pass through, substantially as shown and described.

2. In a loom of the class described, the combination with a pile-wire-supporting blade, of a guide-strip having a slot or opening therein for the binder-warps and the stuffer-warps to pass through, substantially as shown and described.

3. In a loom of the class described, the combination with the pile-wires and supports therefor, of a strip or guide between the pile-wires having a slot or opening therein for the purpose stated, substantially as shown and described.

4. In a loom of the class described, the combination with slotted uprights or guides between the pile-wires, of supports for the pile-wires, and said pile-wires, detachably connected with said supports, substantially as shown and described.

5. In a loom of the class described, the combination with a pile-wire support or blade, having a pocket at its upper end, of a detachable pile-wire having extensions thereon to enter and engage said pocket, substantially as shown and described.

JAMES BUCKLER.

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