No. 786,734. PATENTED APR. 4, 1905.

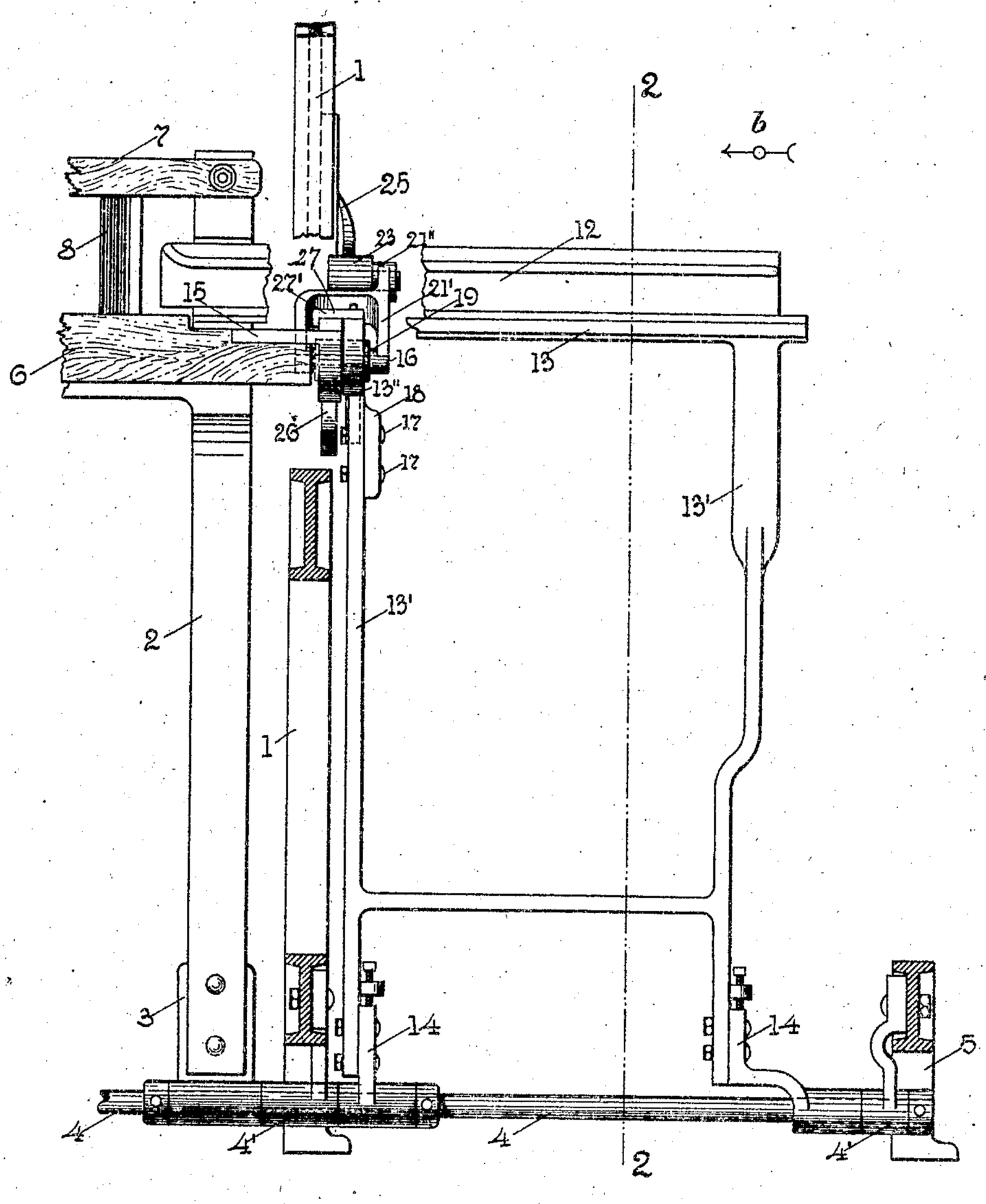
J. T. CYR.

# LOOM FOR MAKING PILE FABRICS.

APPLICATION FILED APR. 23, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

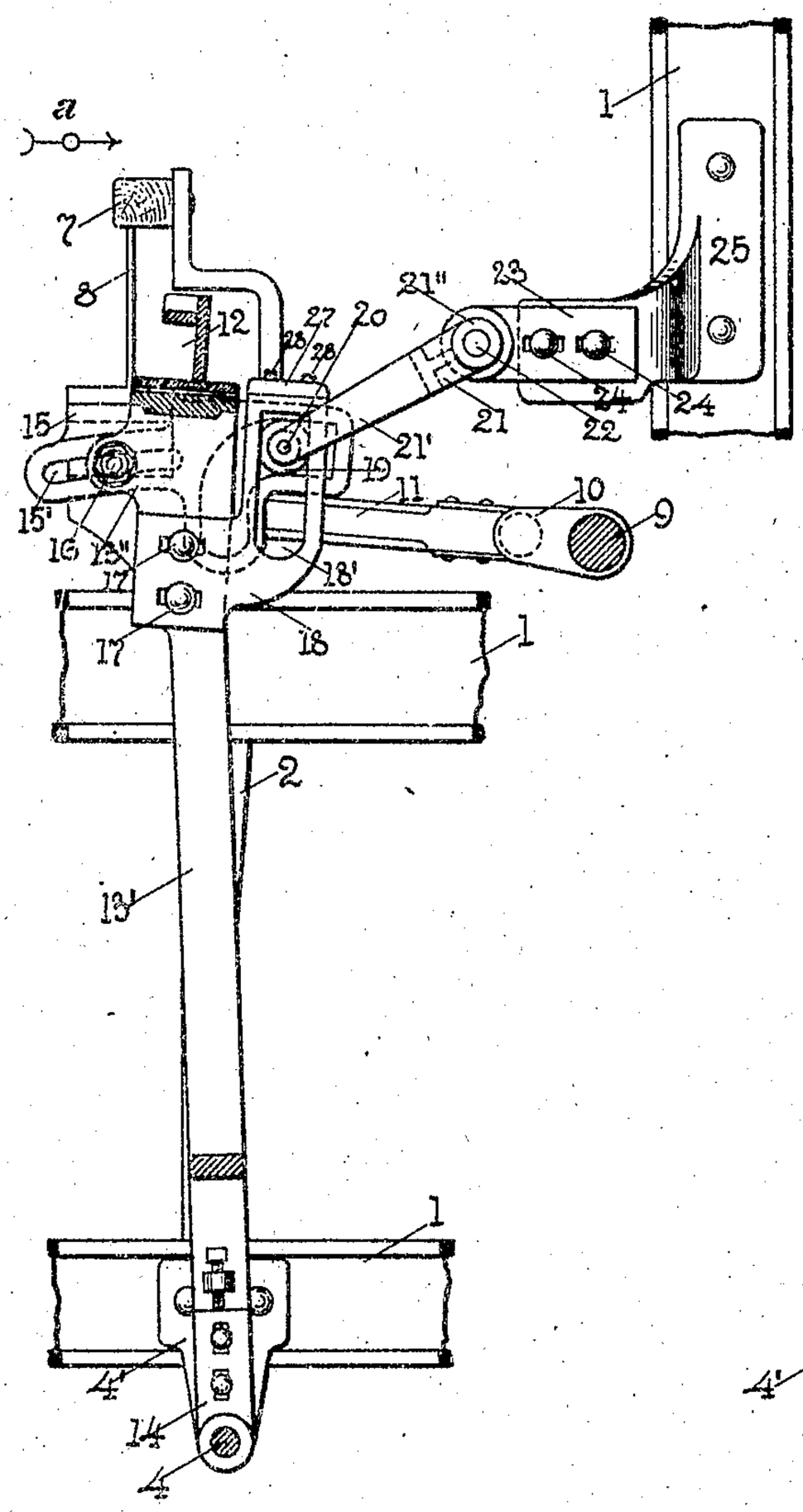
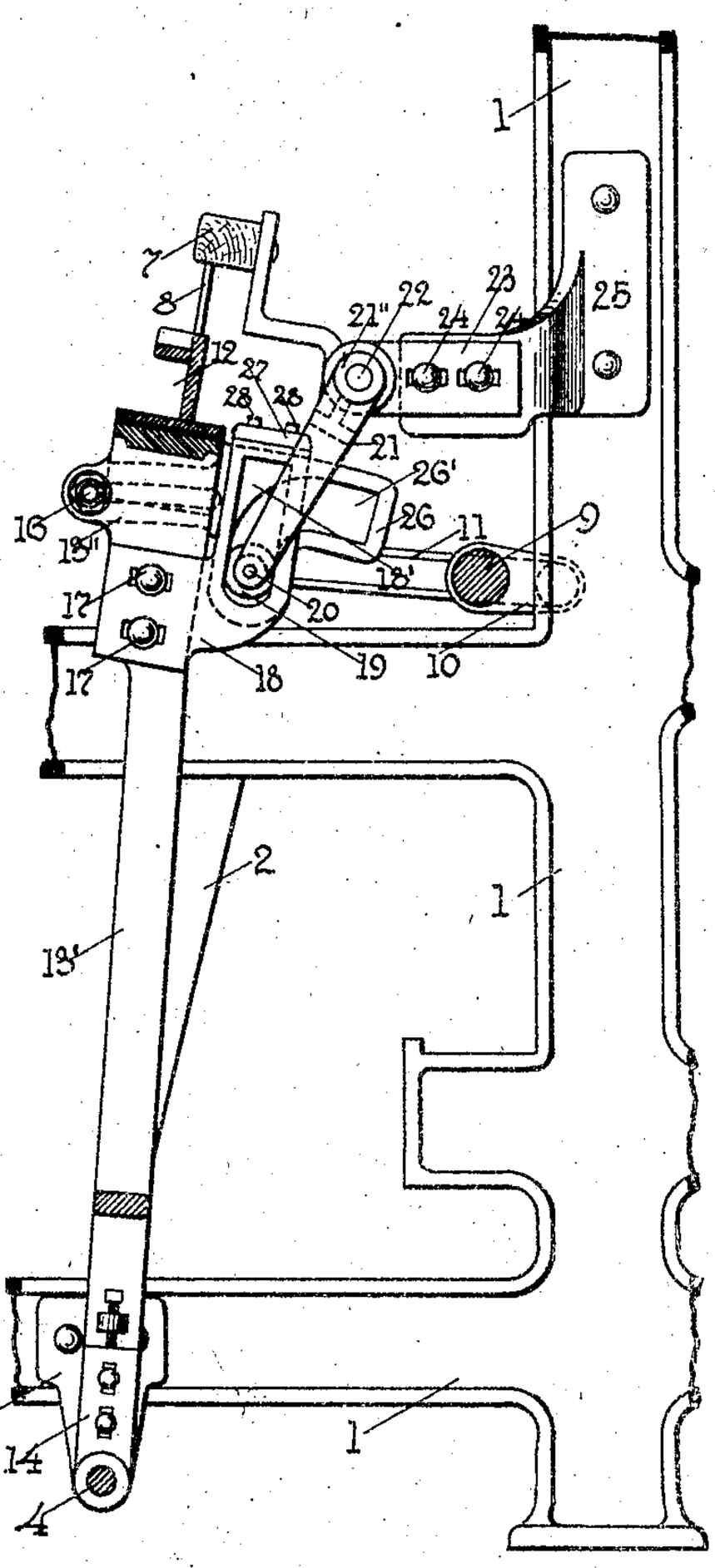



Fig. 3.

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## LOOM FOR MAKING PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 786,734, dated April 4, 1905.

Application filed April 23, 1904. Serial No. 204,498.

*To all whom it may concern:*

Be it known that I, JOSEPH T. CYR, 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 Looms for Making Pile Fabrics, of which the following is a specification.

My invention relates to improvements in looms for making pile fabrics, and particularly to improvements in the lay and shuttle-box motion of pile-fabric looms of the class in which pile-wires are used to form the pile-loops and on which one pile-wire is inserted and another pile-wire is withdrawn from one side of the loom when the lay is in its forward position in the ordinary way. In this class of looms in order that there may be room for the insertion and withdrawal of the pile-wires the shuttle-box at the end of the lay does not move with the lay to its extreme forward position, but only to about its middle position. On the backward movement of the lay the shuttle-box moves back with it to its extreme backward position to be in proper alinement for the shuttle.

The object of my invention is to improve upon and simplify the ordinary construction of the lay and shuttle-box motions in the class of looms referred to; and my invention consists in certain novel features of construction of my improvements, as will be hereinafter fully described.

I have only shown in the drawings sufficient portions of a lay and shuttle-box motion embodying my improvements to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawings, Figure 1 is a front view of one end of a lay and a shuttle-box motion embodying my improvements looking in the direction of arrow *a*, Fig. 2. Fig. 2 is a section on line 2 2, Fig. 1, looking in the direction of arrow *b*, same figure; and Fig. 3 corresponds to Fig. 2, but shows the lay and shuttle-box in their opposite or extreme rear positions.

In the accompanying drawings, 1 is a part of the loom side or frame. 2 is the lay-sword, secured at its lower end to the rocker-iron 3, loose on the shaft 4, which shaft is mounted in bearings 4′ on the loom side 1 and stand 5. (See Fig. 1.) Upon the upper end of the lay-sword 2 is secured the lay 6, the hand-rail 7, and the reed 8 in the usual manner.

9 is the crank-shaft, 10 is the crank, and 11 is the connector from the crank to the lay 6 to operate the lay and move it forward and back in the usual way.

The shuttle-box 12 is secured upon the upper end of a swinging frame 13, which in this instance consists of two uprights 13′, adjustably secured at their lower ends to two rocker-irons 14, loose on shaft 4. (See Fig. 1.)

To the end of the lay 6 is secured the horizontal arm of an angle-plate 15. (See Fig. 1.) The vertical arm of the angle-plate 15 has a horizontally-extending curved guide-slot 15′ therein at its forward end toward the front of the lay, through which loosely extends the inner end of a bolt 16. The outer end of the bolt 16 is secured in the forward extension 13″ on the inner upright 13′ of the swinging frame 13.

The inner upright 13′ of the swinging frame 13 has secured thereto, in this instance by two bolts 17, a guide-stand 18, having a vertical slot 18′ therein at the rear edge of the inner upright 13′ of the swinging frame 13, forming a way for a block 19, which in this instance is made in the shape of a roll with flattened sides, which are held and travel in the guide-slot 18′. The roll 19 is pivotally mounted on a pin 20 in the yoke-shaped end 21′ of an arm 21, which has a hub 21″ pivoted on a pin 22 in a plate 23, adjustably secured by bolts 24 to a stand 25, secured to the loom side 1. The roll 19 also extends into and travels in a curved slot 26′ in a rear extension 26 on the angle-plate 15.

A cap 27 is fastened by screws 28 on the top of the slotted arm 18 and has a lip 27′, which extends over the upper edge of the rear slotted extension 26 on the angle-plate 15 (see Fig. 1) to keep said parts together in the operation of the lay.

From the above description in connection

with the drawings the operation of my improvements will be readily understood by those skilled in the art.

Supposing the lay to be in its rear position, as shown in Fig. 3, with the shuttle-box 12 in alinement with the reed 8 and the roll 19 in the lower part of the guide-slot 18′ on the swinging frame 13 and in the lower part of the guide-slot 26′ in the angle-plate 15, attached to the lay, the roll 19 acts to hold the swinging frame 13, carrying the shuttle-box 12 and the lay 6 in the position shown in Fig. 3, with the box 12 in alinement with the reed 8. On the forward movement of the lay the swinging frame 13, carrying the shuttle-box 12, will move forward with it until the roll 19, traveling in the curved slot 26, is moved up to the upper end of the slot 18′, as shown in Fig. 3, when any further forward movement of the swinging frame 13 and shuttle-box 12 thereon is prevented; but the continued forward movement of the lay 6 is permitted by the roll 19 traveling in the horizontal part of the slot 26′ and the bolt 16 moving in the slot 15′ in the angle-plate 15 on the lay. On the return backward movement of the lay the swinging frame 13 and box 12 will remain at rest until the roll 19 passes from the horizontal part of the slot 26′ into the vertical part, and then the frame 13 and box 12 will move back with the lay and the box 12 be brought into and held in alinement with the reed on the extreme backward movement of the lay, as shown in Fig. 3.

It will thus be seen that by means of my improvements the shuttle-box is not moved with the lay to its extreme forward position, but is stopped so as to leave a clearance for the insertion and the withdrawal of a pile-wire.

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

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 lay pivotally supported and having a swinging motion, of a pivotally-supported and swinging frame at the end of the lay, carrying a shuttle-box, and connections between the lay and said frame, comprising a plate secured to the lay having a vertically and horizontally extending curved slot therein, and a plate secured to the swinging frame having a vertically-extending slot or way therein, a block or roll traveling in said vertically-extending slot, and also in the vertically and horizontally extending curved slot in the plate on the lay, said block or roll carried on a pivotally-attached arm, substantially as shown and described.

2. In a loom of the class described, the combination with the lay, pivotally supported and having a swinging motion, of a pivotally-supported and swinging frame at the end of the lay, carrying a shuttle-box, and connections between the lay and said frame, comprising a plate fast on the lay having a horizontally-extending slot in its forward part, and a vertically and horizontally extending curved slot in its rear part, a bolt extending into said horizontally-extending slot, and secured to said swinging frame, and a plate having a vertically-extending slot or way therein, secured to said swinging frame, a block or roll traveling in said vertically-extending slot and in said vertically and horizontally extending curved slot in the plate on the lay, and a pivotally-attached arm carrying said block or roll, substantially as shown and described.

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