No. 870,749. PATENTED NOV. 12, 1907.

H. E. TAPLIN.

PICKER STICK ATTACHMENT.

APPLICATION FILED NOV. 10, 1906.

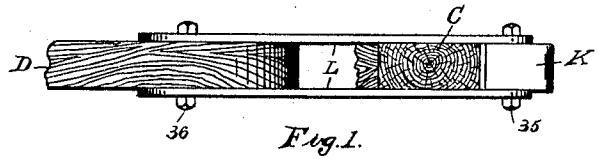

Fig. 1.

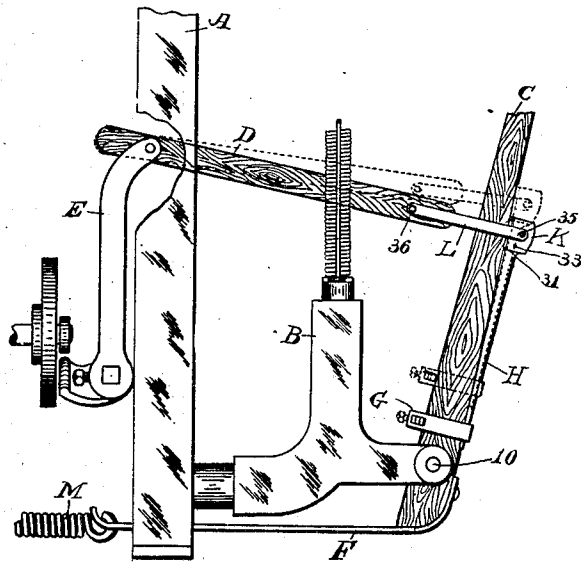

Fig. 2.

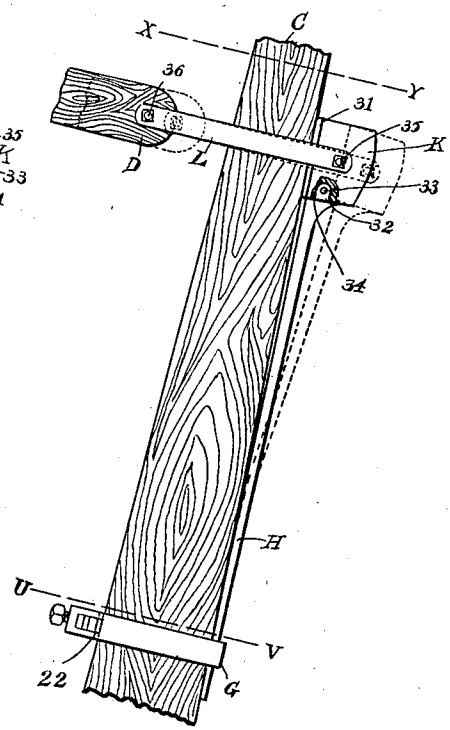

Fig. 4.

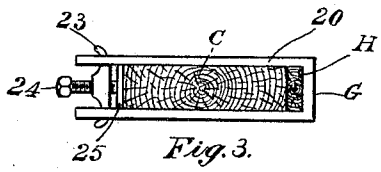

Fig. 3.

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UNITED STATES PATENT OFFICE.

HOMER E. TAPLIN, OF LOWELL, MASSACHUSETTS.

PICKER-STICK ATTACHMENT.

No. 870,749. Specification of Letters Patent. Patented Nov. 12, 1907.

Application filed November 10, 1906. Serial No. 342,859.

To all whom it may concern:

Be it known that HOMER E. TAPLIN, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, has invented certain new and useful Improvements in Picker-Stick Attachments, of which the following is a specification.

My invention is an attachment to the picker sticks or staffs of looms and comprises a combination of parts to replace the sweep strap, and power strap, now commonly used. Its principal objects are to provide a positive connection between the picker staff and the sweep stick so that there will be no lost motion on the forward stroke of the picker, and to provide a cushion for the back stroke of the picker staff, sweep stick, and connections.

My invention is disclosed in the accompanying drawing, in which

Figure 1 is a top view, in section on line X Y of Fig. 4, of the lug straps, sweep stick and a portion of the picker staff. Fig. 2 is a side view of the device. Fig. 3 is a view of the adjustment band and picker staff on line U V of Fig. 4. Fig. 4 is an enlarged detail view of my attachment in place.

A represents a portion of the loom frame.

B represents the rocker iron to which the picker stick C is pivoted.

D is the sweep stick and E is the sweep arm by which the sweep stick and lug straps are actuated.

F is the foot strap which is attached to a spring M by which picker stick C is brought back after delivering its blow to the shuttle or picker. The picker staff C is pivoted at 10 to the rocker iron, as shown.

The sweep stick D and sweep arm E are of the ordinary construction.

My device consists, substantially, of the adjustment band G, the back piece H, the head K, and the straps L.

Adjustment band G consists of the U shaped strap 20, which is of a width equal to the width of an ordinary picker stick and somewhat longer than the depth of the picker stick. Near the open end are square openings 22 through which pass the curved shoulders of brace 23. A bolt 24 passes through brace 23 and against a bearing plate 25 interposed between it and picker stick C. By this construction the bolt 24 can be loosened and the whole device can be slid up or down upon picker stick C, as shown by the dotted lines in Fig. 2 and it may be clamped in any position by tightening bolt 24. In so shifting the positions of the parts, the band G may be moved up or down, the back piece H may be moved up or down or both may be moved together as desired. In this way more or less power is given to the blows of the picker stick and picker and the elasticity of back piece H may be increased or diminished. The advantage of the construction shown is, that by loosening bolt 24 and separating the legs of strap 20, brace 23 may be withdrawn and strap 20 may be readily removed and attached to a new picker stick.

The back piece H consists preferably of a strip of springy wood of a size at the bottom to slide through band G, when bolt 24 is loosened. This strip may be of wood, metal, fiber, bone, celluloid, rubber or other elastic substance, but I prefer wood. The top of back piece H is extended into a tongue 32 which fits into a suitable mortise in head K. Head K and tongue 32 are held together by a pin 33. A shoulder 34 on back piece H helps to make the union firm.

The head K is of fiber, metal or wood and is pivoted by a stud 35 to the straps L which may be of wood, fiber or metal and are pivoted at their other end to the sweep stick D by a stud 36. On the face of head K, which is next to the picker stick C, I preferably fasten a sheet of leather 31, as that is the part which receives the weight of the blow. If head K is made of fiber, as I prefer to make it, and stud 35 of metal, no oil is needed to lubricate the bearing and the wear is reduced to a minimum. Straps L may be of metal as there is so little jar that they will not crystallize.

The operation of my device is as follows:—Starting with the picker stick in the position shown in Fig. 2, at the required time picker stick C is driven forward by the action of sweep arm E and sweep stick D, acting through straps L and head K. The action of the spring in back piece H keeps head K pressed close against picker stick C so that there is no lost motion. After the blow is delivered foot strap F throws picker stick C back carrying with it in close contact the head K and thereby sweep stick D and sweep arm E. When the top of picker stick C strikes its buffer or check, the momentum acquired carries along sweep arm E and sweep stick D thereby forcing back head K and back piece H, as shown by the dotted lines in Fig. 4. When the momentum of these parts is exhausted by working against the spring of back piece H, the spring of back piece H brings head K back into contact with the picker stick C and keeps it there so that there will be no lost motion upon the next forward stroke. The action between picker stick C and back piece H is such that as picker stick C is held firmly in one place by its pivot 10, foot strap F, and its buffer, not shown, the back piece H will always bring head K up to picker stick C, and this brings sweep stick D and sweep arm E back to just the same place, for every stroke. At the same time spring H will take up the force of the blow, which is usually given to picker stick C by the end of sweep stick D on the back stroke. In the usual constructions, as sweep arm E has free play on its pivot, there is nothing to stop the momentum given it and sweep stick D by the back stroke of the picker stick except by the end of the

sweep stick striking the picker stick. These blows quickly wear out and finally break the picker sticks and also wear out the ends of the sweep sticks.

Where the ordinary lug strap is used, there is a good deal of lost motion by reason of the blow given by the lug strap as it strikes the picker stick and also by reason of the fact that it slides up and down on the picker stick. This blow and sliding cause the lug strap to be quickly worn out. Also as the lug strap, within the limits permitted by the power strap, can slide up and down along the picker stick, the power is applied at a different point on different strokes and at different parts of the same stroke. This makes the blows irregular in speed and strength.

With my device, the action of the picker stick is smooth and positive which saves much wear on the parts. This saving of wear is especially noticeable on the picker and the free end of the picker stick which strikes the picker. Where there is a play between the lug strap and the picker stick, the blow given the picker is a shivering blow and the result of this is that the picker quickly wears out and the picker stick splits and breaks. Frequently a nick is worn in the picker stick which finally catches on the picker and splits the stick.

The position of head K can be adjusted on picker stick C to a small fraction of an inch and it is not necessary to weaken the picker stick by adjustment holes for the power strap. In this way power can be put on or taken off and it can be very closely adjusted. As none of the parts are of leather or other pliant material, they cannot stretch or get out of place as do the leather lug straps much in use, which frequently stretch so much as to allow the loom to bang off or the shuttle to jam. With my device, the stroke never changes when once adjusted.

What I claim as my invention and desire to cover by Letters Patent is;—

1. In a loom, a picker staff, an elastic back piece one end of which is attached thereto in such manner that the other end will be normally in contact with the back of the picker staff, straps pivoted to the free end of the back piece and to the sweep stick, and the sweep stick as described.

2. In a loom, a picker staff, an elastic back piece attached thereto, a head carried by the back piece and held yieldingly thereby against the back of the picker staff, straps pivoted to the head and to the sweep stick, and the sweep stick as described.

3. In a loom, a picker staff, an elastic back piece, an adjustment band which holds adjustably said back piece to the picker staff, a head carried by the back piece, straps pivoted to the head and to the sweep stick, and the sweep stick as described.

4. In a loom, a picker staff, an adjustment band carried thereby, a back piece comprising a thin strip of elastic material held at one end by said band, a head carried by the other end of the back piece, straps pivoted to the head and to the sweep stick, and the sweep stick as described.

5. In a loom, a picker staff, an adjustment band carried thereby, a back piece comprising a thin strip of elastic wood held at one end by said band, a head carried by the other end of the back piece, straps pivoted to the head and to the sweep stick, and the sweep stick as described.

6. In a loom, a picker staff, an adjustment band carried thereby, a back piece comprising a thin strip of elastic wood held at one end by said band, a head made of fiber carried by the other end of the back piece, straps pivoted to the head and to the sweep stick, and the sweep stick as described.

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

HOMER E. TAPLIN.

Witnesses:
ELLIS LAYCOCK,
JAMES D. O'HEARN.