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D. YOUNG.

PICKER STOP MECHANISM FOR LOOMS.

(Application filed Nov. 21, 1899.)

(No Model.)

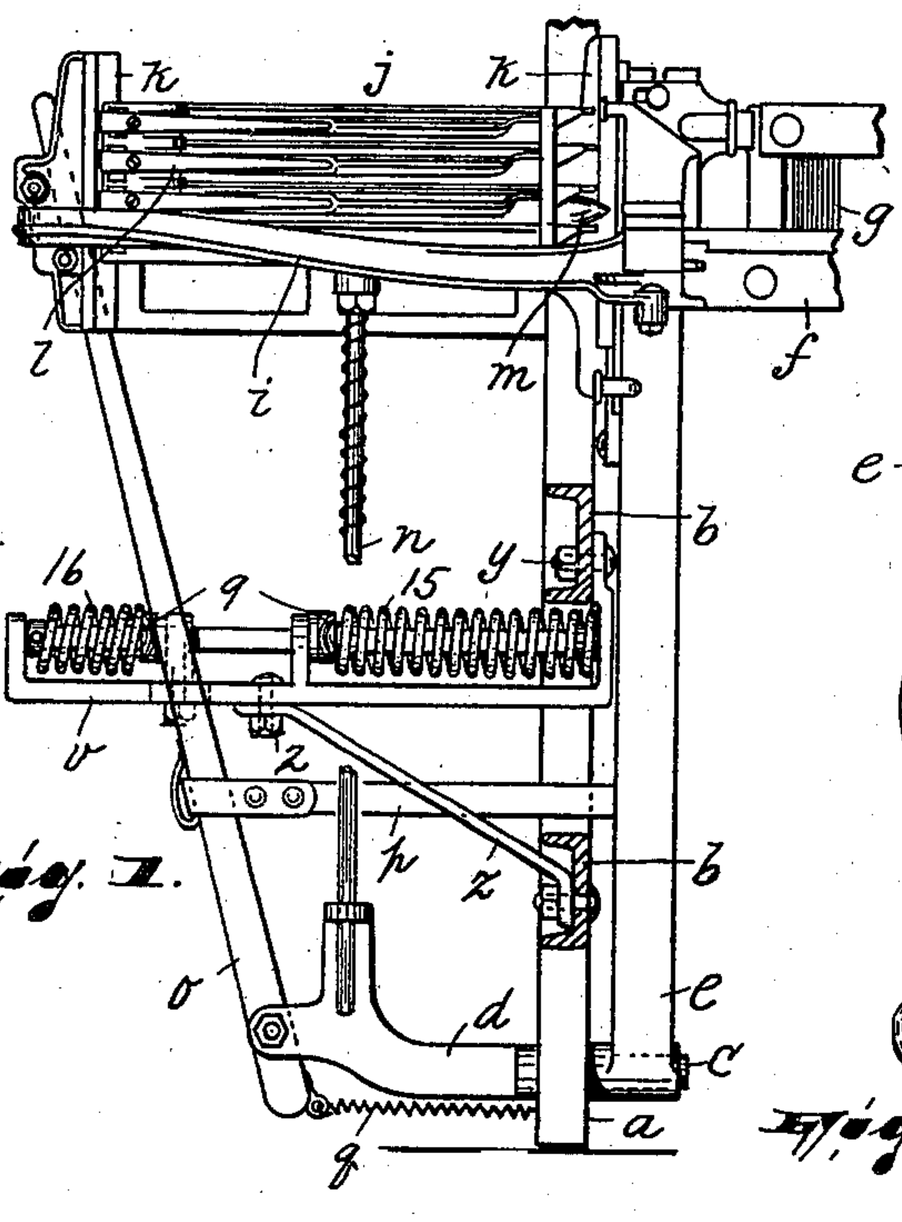

Fig. 1.

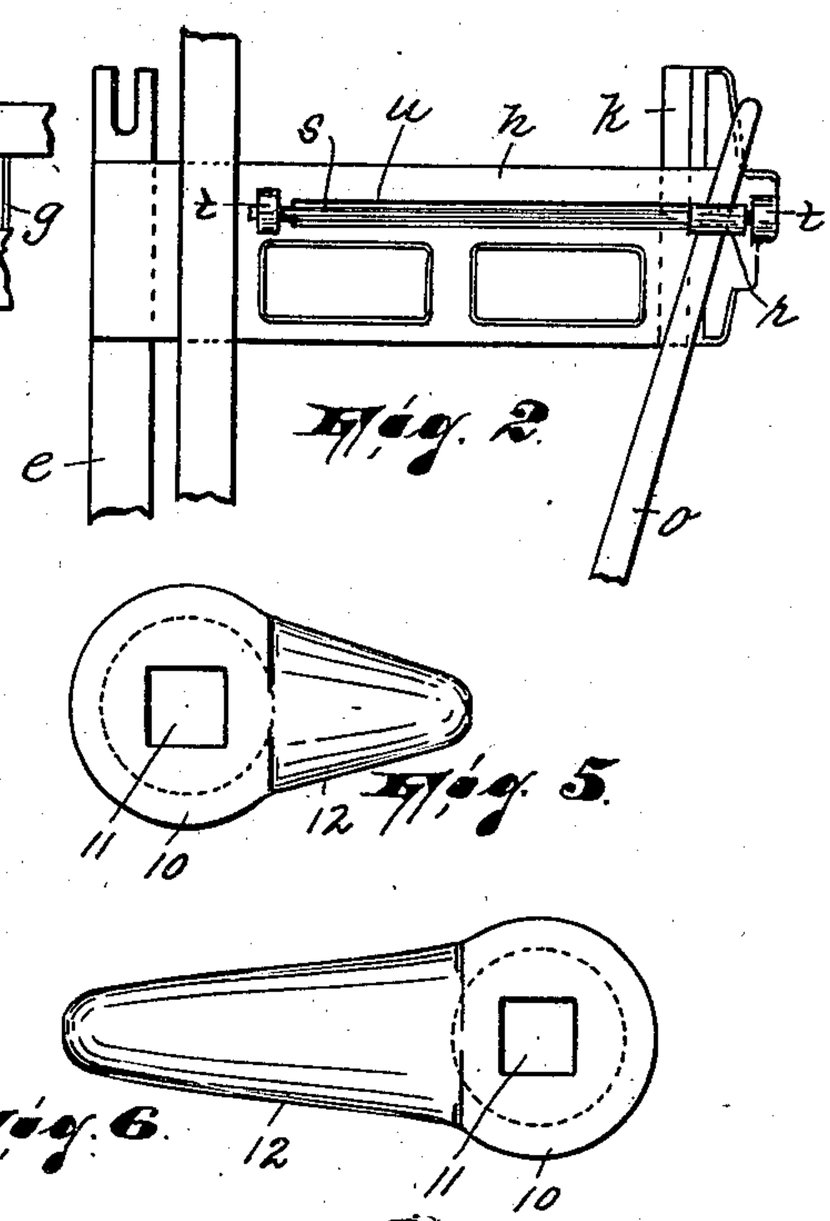

Fig. 2.

Fig. 5.

Fig. 6.

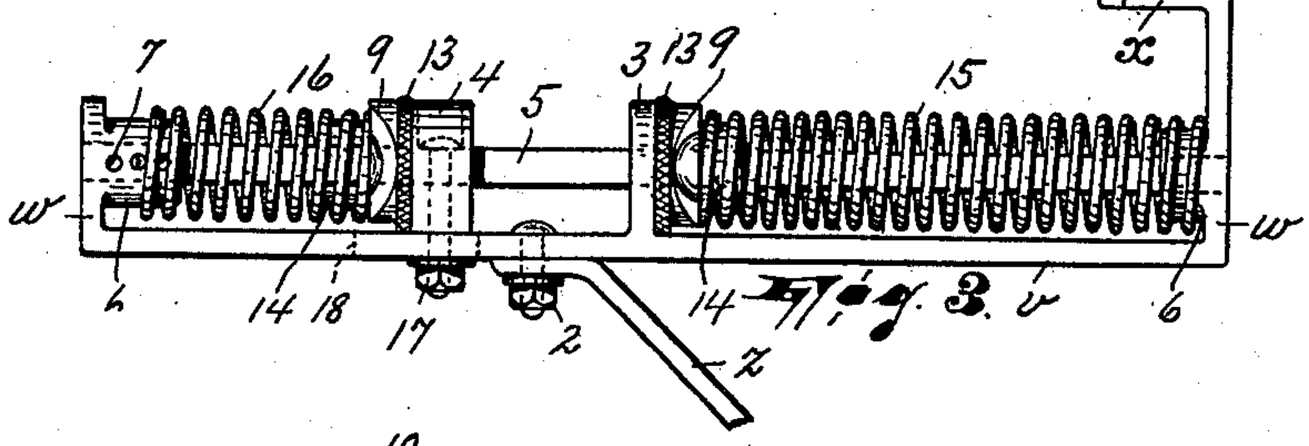

Fig. 3.

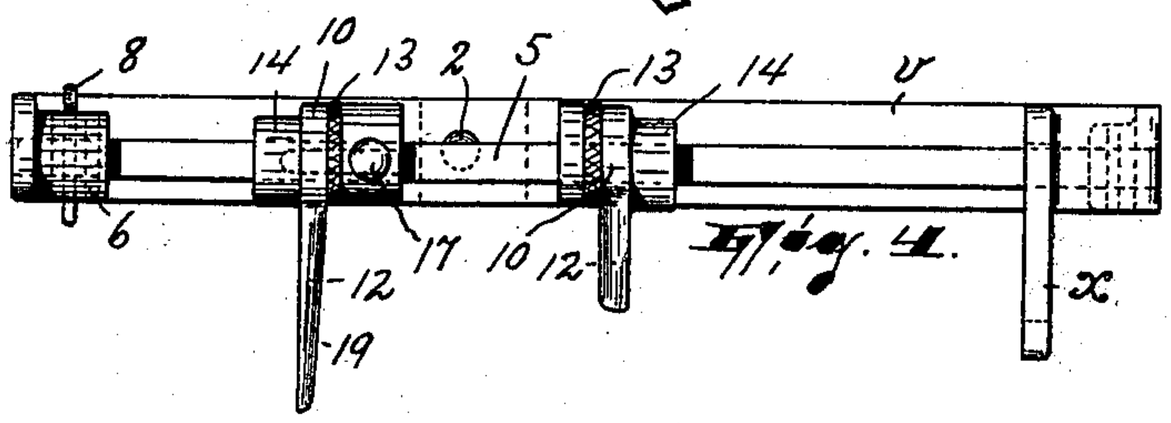

Fig. 4.

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PICKER STOP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 658,101, dated September 18, 1900.

Application filed November 21, 1899. Serial No. 737,750. (No model.)

To all whom it may concern:

Be it known that I, DAVID YOUNG, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Picker-Stick Stop Mechanism or Buffer Attachments for Looms; 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 letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to looms; and it has reference particularly to that portion of a loom involved in its shuttle-controlling mechanism.

The object of the invention is to provide a loom with a simple, durable, and generally-efficient attachment for limiting the movements of or stopping the picker-stick in its action back and forth to drive the shuttles.

The advantages of my improved attachment over similar devices at present in use will upon a full understanding of the same as set forth herein be recognized by those familiar with the art to which my invention appertains.

The invention consists in substantially the improved stop mechanism or buffer attachment for a loom picker-stick or other similar element hereinafter described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in the several figures of which corresponding characters of reference designate like parts, Figure 1 designates a view in front elevation of the end portion of a loom and the shuttle-controlling mechanism. Fig. 2 is a rear view of a portion of what is shown in Fig. 1. Fig. 3 is a front view, and Fig. 4 a top plan view, somewhat enlarged, of my improved picker-stick stop mechanism or buffer attachment; and Figs. 5 and 6 are enlarged detail views of the detents or stops with which the picker-stick is adapted to directly engage.

In said drawings, *a* designates one of the end uprights of a loom-frame, the same comprising as portions of its structure two horizontal rails *b*.

c is a short rock-shaft which has bearings in the upright *a* near its base and which at one end carries a bracket *d* and at the other end carries one of the lay-swords *e*, upon which latter are sustained the batten *f*, reed *g*, and the other parts which in the ordinary loom said lay-swords carry. The lay-swords are oscillated in any well-known manner.

h designates a plate which is secured at one end to the lay-sword *e* and which at the other end is braced by an arm *i*, which projects from said lay-sword. This plate constitutes a back for the shuttle-box structure *j*, whose true reciprocating movement is maintained by guides *k*, carried by the lay-sword and by the free end of the plate *h*. *l* designates shuttle-binders, which constitute a part of the box structure, and *m* is one of the shuttles. *n* is a rod which projects downwardly from the shuttle-box structure and which is guided in the bracket *d* at its lower end. To this rod may be connected any well-known mechanism for operating the shuttle-boxes.

In the bracket *d* is fulcrumed the picker-stick *o*, the same being adapted to be actuated by a strap *p* and a spring *q*, as usual, and having its free or upper end engaging the picker *r* also in the usual manner, which is penetrated by and adapted to slide on a rod *s*, said rod being supported in projections *t*, extending rearwardly from the plate *h*, and said plate having a slot *u* opposite the rod through which the picker projects, so as to reach the shuttle to be driven.

v designates the frame or support for my improved picker-stick stop mechanism or buffer attachment. This support consists of an elongated plate or flat bar having its ends turned off at right angles to the body of the bar to form projections or abutments *w*. One of these projections is longer than the other and comprises an angular and integral extension *x*, which affords a bracket whereby the support may be secured to the frame of the loom—say to the upper rail *b* thereof—by means of bolts *y*. A brace *z*, projecting from the lower rail *b* of the loom-frame, constitutes a further means for sustaining the support, to which its free end is secured by a bolt 2.

Substantially midway between the projections *w* there extends from the plate another and integral projection 3, and between this

and the outermost projection *w* is still another projection 4. The various projections *w*, 3, and 4 are penetrated by a squared rod 5. The inner face of each of the projections *w* is provided with an integral boss 6, formed about the rod, and extending through the boss 6 for the outer projection *w* and also through the rod is a series of holes 7, into any one of which a pin 8 may be inserted. Upon the rod 5 and adjacent the projections 3 and 4 are mounted stops 9, each stop comprising a disk 10, having a squared orifice 11 for the rod 5 and an integral finger 12. Against these stops is adapted to take the picker-stick. Between the disk of each stop and the projection 3 (or 4) there is arranged on the rod a non-metallic washer 13. The face of each disk which is adjacent the adjoining projection *w* has a boss 14, which corresponds to the boss 6, above referred to.

15 and 16 are two spiral springs which the rod penetrates, each spring being arranged between a projection and one of the stops and its ends receiving the bosses.

It will be apparent that it may be desirable to adjust the picker-stick in its rest position—*i. e.*, where the spring *q* normally tends to maintain it. In order that this may be effected, I have formed the projection 4 in the shape of a block, which is secured to the bar or plate of the support *v* by means of a bolt 17, whose head is countersunk in the block and which penetrates a slot 18 in said bar or plate. By adjusting the bolt in the slot 18 the block which it is adapted to secure may be set in any position relatively to the outer projection *w*, and thereby the position of the adjacent stop 9 may be altered. The bolt also penetrates the rod 5, which has a slot (not shown) for its reception and corresponding to the other slot 18.

The series of holes 7 is provided so that the pin 8, which penetrates them and against which the end of the spring 16 is adapted to bear, can be placed in any one of them to adjust the tension of said spring.

In Fig. 4 it will be seen that the outer stop 9 is longer than the inner one. This provision is made in view of the fact that the picker-stick has a forward-and-backward motion with the batten and box structure, as well as a lateral oscillation relatively to the loom. Since the picker-stick is at the limit of its forward movement when it reacts after driving the shuttle, the outermost stop is the longer one. It will also be seen upon a view to Fig. 4 that the face or edge 19 of the finger 12 of the stop against which the picker-stick strikes in its reverse movement is beveled or inclined toward the free end of said finger. The picker is usually provided with a slight recess or notch for the reception of the point of the shuttle, and in order that the movement of the shuttle-box may be effected without being impeded by the engagement of the points of the shuttles with the picker said recess or notch has to be formed in the shape of a vertical groove, in which the shuttle-points may slide. It is to obviate the necessity of forming this groove in the picker that I incline or bevel the edge 19 of the finger of the stop above referred to. It will be seen that since the spring *q* is constantly tending to force the upper end of the picker-stick, and consequently the picker, outwardly said picker-stick will be held in contact with the inclined edge 19 of the finger, and during the movement of the box structure backward and forward the picker will have a slight movement inwardly and outwardly relatively to the loom without reference to the movement which the picker-stick imparts to it in driving the shuttle. Therefore when the picker-stick is at the free end of the finger 12 of the outermost stop the movement of the box to change the shuttles, which occurs at this time, can be effected without the picker engaging the points of the shuttles.

The usual means for limiting the throw of the picker-sticks consists of a strap which surrounds the picker-stick and is secured to some stationary part. Besides being objectionable for various reasons, which will be appreciated by those skilled in this art when compared with my improved buffer attachment, such a device as this tends to twist the picker-stick each time it is stopped thereby, and thus not only wears the bearing of the picker-stick, but also obviates the perfect working of the picker, which is caused to bind on its rod *s* by the above-mentioned undesirable action of the picker-stick. In my device the objections just referred to are overcome, for the stops afford means against which the picker-stick can strike squarely.

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

1. In a picker-stick stop mechanism or buffer attachment for looms, the combination of a suitable frame or support having a series of projections, a rod mounted in said projections, spiral springs penetrated by said rod and each arranged between two projections, and spaced stops carried by said rod and disposed between the adjoining ends of the springs and the adjacent projections, said rod being squared and the stops having squared orifices receiving said rod, substantially as described.

2. In a picker-stick stop mechanism or buffer attachment for looms, the combination of a suitable frame or support having a series of projections, a rod mounted in said projections, spiral springs penetrated by said rod and each arranged between two projections, spaced stops carried by said rod and disposed between the adjoining ends of the springs and the adjacent projections, said rod being squared and the stops having squared orifices receiving said rod, and means for adjusting one of said stops, substantially as described.

3. In a picker-stick stop mechanism or buffer attachment for looms, the combination of a suitable frame or support having a series of projections, a rod mounted in said projections, spiral springs penetrated by said rod and each arranged between two projections, and spaced stops carried by said rod and disposed between the adjoining ends of the springs and the adjacent projections, said rod being squared and the stops having squared orifices receiving said rod, and one of said projections consisting of a block adjustably secured to the support, substantially as described.

4. In a loom, the combination, with the frame, of a reciprocating and oscillating shuttle-box structure, a fulcrumed picker-stick, a movable picker operatively disposed relatively to said shuttle-box structure and connected to the picker-stick, a support projecting from said frame, spaced elastic buffers carried by said support, the picker-stick being disposed between and adapted to engage them and the acting face of one of said buffers being inclined or beveled from said support outwardly, and means for normally maintaining the picker-stick in contact with said last-named buffer, substantially as described.

5. In a loom, the combination, with the frame, of a picker-stick fulcrumed therein, and movable transversely relatively to the direction of its picking motion, a support projecting from said frame, and spaced elastic and independently-movable buffers carried by said support, the picker-stick being disposed between and adapted to engage them and the impact-face of one being inclined, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of November, 1899.

DAVID YOUNG.

Witnesses:
ROBERT J. POLLETT,
JOHN W. STEWARD.