April 21, 1970 F. H. PRESSLEY 3,507,306

PICKER STICK CHECKING DEVICE

Filed Nov. 16, 1967

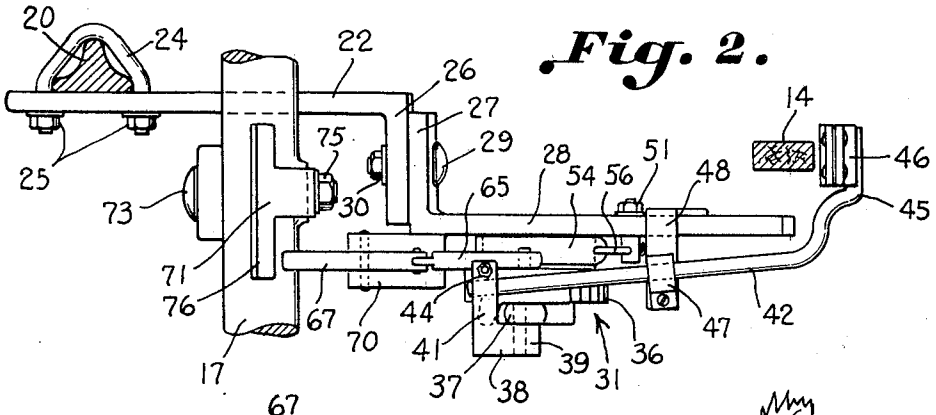


Fig. 2.

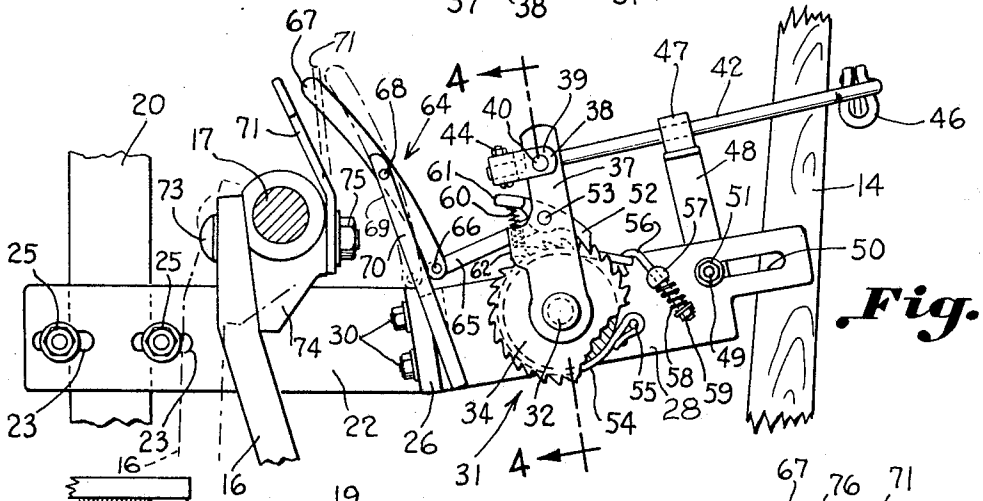


Fig. 3.

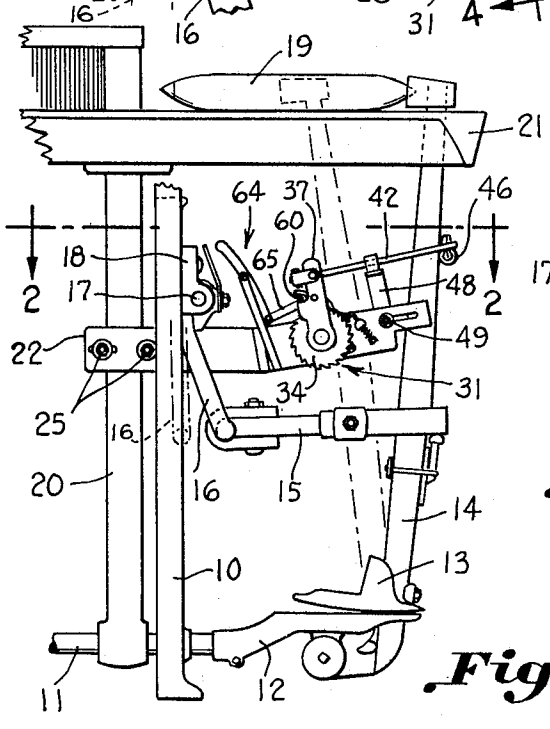


Fig. 1.

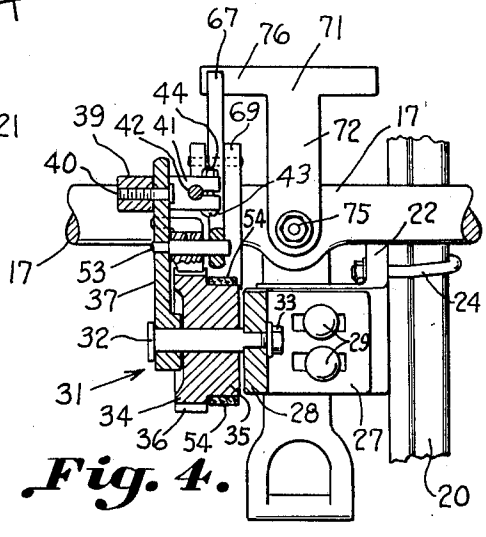


Fig. 4.

INVENTOR.
FELIX H. PRESSLEY

BY Bailey & Doity

ATTORNEYS.

United States Patent Office

3,507,306

Patented Apr. 21, 1970

3,507,306

PICKER STICK CHECKING DEVICE

Felix H. Pressley, 311 Snow St., Greer, S.C. 29651

Filed Nov. 16, 1967, Ser. No. 683,714

Int. Cl. D03d 49/40

U.S. Cl. 139—162 3 Claims

ABSTRACT OF THE DISCLOSURE

A picker stick checking device for use upon a loom having a pick shaft, and a picker stick provided for propelling a shuttle across the loom during weaving. The checking device includes a brake drum having ratchet teeth thereon. A brake element engages the brake drum for retarding the rotation of the brake drum in one direction. A pivotal lever having pawls mounted thereon, is carried adjacent the brake drum and is caused to be pivoted by the picker stick on its outward stroke. The brake drum, in turn, checks or arrests the movement of the picker stick. A resetting means is carried on the pick shaft for causing the pivotal lever to be reset on the pick or power stroke of the loom, thus, returning the checking device to its initial position where such is ready to receive the picker stick on the next checking or outward stroke.

This invention relates to a picker stick checking device, and more particularly to a means for resetting the checking device to return such to its initial checking position.

The present invention constitutes an improvement upon the picker stick checking devices shown in my prior United States Patent No. 2,452,955, issued Nov. 7, 1948 and Patent No. 2,956,590, issued Oct. 18, 1960.

One of the problems encountered in checking devices, heretofore, used is that on the pick or power stroke of the picker stick such frequently damaged the checking device in returning such to its initial checking position. It is desired to have a checking device which will smoothly and uniformly check the picker stick on the outward stroke and can be reset without substantially effecting the operation of the picker stick and wearing the checking device.

Accordingly, it is an important object of the present invention to provide a picker stick checking device which checks the motion of the picker stick uniformly, and is reset to the initial checking position on the power or pick stroke of the picker stick.

A further important object of the present invention is to provide a picker stick checking device with a resetting device which minimizes the violet shocks and wear on the checking device during resetting of such to its initial checking position.

A further object of the present invention is to provide a picker stick checking device which may be mounted near the longitudinal center of the sword, whereby vibrations of the checking device are materially reduced and such can be readily reset to its initial checking position.

A further object of the invention is to provide a picker stick checking device which will properly stop the shuttle when it enters the shuttle box while minimizing bouncing of such.

Still another object of the present invention is to provide a picker stick checking device which may be applied to the left or right side of the loom without materially altering the construction of the checking device.

The construction designed to carry out the invention will be hereinafter described, together with other features thereof.

The invention will be more readily understood from a reading of the following specification and by reference to

the accompanying drawing forming a part thereof, wherein example of the invention is shown and wherein:

FIGURE 1 is a fragmentary front elevation of a loom, showing the checking device in side elevation and applied to the loom,

FIGURE 2 is a plan view of the checking device taken along line 2—2 of FIGURE 1,

FIGURE 3 is an enlarged side elevational view, partially in section, of the checking device, and

FIGURE 4 is a transverse sectional view taken along line 4—4 of FIGURE 3.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numeral **10** designates the frame side of the loom, in the lower portion of which is journaled the rocker shaft **11**, carrying at each end of parallel **12**, upon which is mounted the parallel shoe **13** for the picker stick **14**. This picker stick is operated by the lug strap connection **15**, connected with the pick arm **16** mounted upon the pick shaft **17**. The pick shaft is journaled in suitable bearings **18** carried on the frame side **10**. On the power or pick stroke the pick shaft **17** is pivoted clockwise (FIGURE 1) causing the picker stick **14** to propel the shuttle **19** across the loom. Rigidly mounted upon the rock shaft **11** are swords **20**, only one being shown, and a lay **21** is rigidly mounted upon the upper ends of tre swords **20**. During the weaving operation the lay **21** is moved back and forth by the usual crank shaft. The loom thus described is of the conventional type, such as shown in Patent No. 2,093,-226.

The checking device is mounted on the swords **20** near the longitudinal center of the sword, preferably slightly above the lug strap, and the elevation may be somewhat varied. The location of such brings the checking device down sufficiently below the lay, whereby the speed of the checking device is considerably below the speed of the lay. One of the problems encountered in mounting a checking device upon the lay is the excessive vibrations encountered.

The checking device constructed in accordance with the present invention embodies a horizontal bracket **22** for attaching the checking device to the sword **20**. A pair of spaced holes **23** are carried adjacent the outer end of the bracket for accommodating a U-bolt **24** which encompasses the sword **20**, and has a pair of nuts **25** threaded on the end thereof, for securing the bracket to the sword. The bracket **22** has a laterally extending portion **26** adjacent the other end which fits flush against a corresponding laterally extending portion **27** of another inclined bracket **28**. Bolts **29** extend through openings provided in the laterally extending portions **26** and **27**, respectively, and have nuts **30** threaded thereon for securing the two brackets **22** and **28** together. Thus, the bracket **22** is rigidly mounted upon the sword **20**, near its longitudinal center, and is arranged near and above the lug strap connection **15**, as shown.

A brake device **31** is mounted upon the inclined bracket **28**, and includes a horizontal shaft **32** which is rigidly secured to the bracket **28**. It is noted that the inner end of the horizontal shaft **32** is reduced so that when a nut **33** is drawn tight against the side of the bracket **28** such rigidly secures the shaft **32** to the bracket. Rotatably mounted upon the shaft **32** near one side of the bracket **28** is a combined brake drum and ratchet wheel **34**. Such includes a cylindrical brake drum portion **35**, and a somewhat enlarged toothed ratchet wheel portion **36**, integral therewith, as shown.

Likewise, rotatably mounted on the shaft **32** is a generally vertical lever or bar **37** having an opening adjacent the bottom thereof for receiving the shaft **32**. During the checking and resetting operation of the brake drum such lever arm **37** pivots clockwise and counter-

clockwise on the shaft 32 depending upon the operation taking place. An angle member 38 has one flange 39 thereof journaled on a laterally extending stud 40 carried on an upper end of the lever 37. The stud 40 is carried in fixed relation with the lever 37. The angle member 38 has a laterally extending portion 41, which is integral with the flange 39. The free end of the laterally extending portion 41 is bifurcated for receiving one end of an L-shaped check element or rod 42. The end of the shank portion of the rod 42 is carried within the bifurcated end of the laterally extending portion 41 and is rigidly secured therein by a bolt and nut 43 and 44, respectively. The forwardly projecting horizontal part 45 of the L-shaped check rod 42 carries a resilient or cushion pad 46 which extends across and engages the outer edge of the picker stick 14 during the checking or outward stroke of the picker stick 14. In one preferred embodiment, the resilient pad 46 is constructed of leather.

The shank portion of the checking rod 42 is slidably journaled in a bearing 47 carried on top of a standard 48. The lower end of the standard 48 is bolted to the bracket 28 by means of a bolt 49 extending through an elongated slot 50. By adjusting the position of the bolt 49 within the slot 50 and tightening down on the nut 51 the L-shaped checking rod 42 can be properly positioned for engaging the picker stick on the checking stroke.

A pawl 52 is pivotally carried on a laterally extending stud 53 which has one end fixed in the medial portion of the lever 37.

A braking element in the form of a brake band 54 is carried in engagement with the brake drum portion 35 of the combination brake drum and the ratchet wheel for yieldably restraining or retarding the rotation of the brake drum in a clockwise direction. The brake band 54 can be of any suitable construction having a high coefficient of friction, and in one embodiment such takes the form of a leather belt. One end of the brake band is attached to a stationary pin or stud 55, carried on the bracket 28, while the opposite end of the brake band is resiliently adjustably secured through a connecting element 56 to a member or bolt 57, rigidly mounted upon the bracket 28. The connecting element includes a hook-shaped member which passes through the end of the brake band, and has a shank portion which extends through a hole in the bolt 57 and has a spring and nut 58 and 59, respectively, carried on the lower end. By adjusting the nut the pressure exerted on the bolt by the spring can be varied so as to adjust the pressure exerted on the brake drum portion 45 by the brake band 54.

The pawl 52 is resiliently urged into engagement with the teeth on the ratchet wheel 36 by a spring 60 carried on the side of the lever arm 37. It is noted that the upper end of the spring 60 engages a rearwardly extending portion 61 of the pawl 52 to pivot such in engagement with the teeth on the ratchet wheel 36. The lower end of the spring 60 is carried within a vertical bore in a protruding portion 62 of the lever arm 37.

Thus, the pawl 52 is adapted to drive or turn the combined brake drum and ratchet wheel 34 in the clockwise direction, FIGURES 1 and 3, and to trip over the teeth on the ratchet wheel 36 without turning the latter when the lever arm 37 swings in the counterclockwise direction.

After the L-shaped rod 42 has been pulled to the right, FIGURE 3, during the checking of the picker stick 14, it is desired to reset the pawl 52 on the combination brake drum and ratchet wheel 34. Such is accomplished by using or taking advantage of the motion associated with the pick shaft 17 when such is pivoted on the pick or power stroke to throw the shuttle 19 across the loom.

A connecting arm 64 is provided for transferring the motion of the pick shaft 17 to the lever arm 37. The connecting arm 64 includes a first elongated member 65 which has one end pivotally secured to the laterally extending stud 53 carried on the lever arm 37. The other end of the elongated member 65 is pivotally secured as at 66 to the lower end of a substantially vertical pivotal arm 67. The vertical arm 67 is journaled on a pin 68 carried between a bifurcated end 69 of an upwardly extending bracket 70. The lower end of the bracket 70 is secured by any suitable means to the upwardly inclined bracket 28.

The motion of the pick shaft 17 on the inward or power stroke is imparted to the connecting arm 64 for resetting the pawl 52 on the ratchet wheel 36 through a T-shaped upwardly extending member 71. The shank portion 72 of such is mounted on the pick shaft 17 by means of a bolt 73 extending through a bracket 74 forming a part of the pick arm and a hole carried in the lower end of the shank portion 72 of the T-shaped member. A nut 75 is drawn tight on the bolt against the shank portion 72 so that the T-shaped member 71 will pivot in a clockwise direction with the pick arm 16 and pick shaft 17 on the power stroke. As the T-shaped member 71 pivots from the full line position to the dotted line position a flange portion 76 of the T-shaped member engages the vertical pivotal arm 67 rotating such from the full line position to the dotted line position shown in FIGURE 3. Such, in turn, causes the lever arm 37 and the pawl 52 to be pivoted in a counterclockwise direction to reset the checking rod 42 to its initial position and causing the pawl 52 to trip backwards over the teeth on the ratchet wheel 36.

In operation, on the checking or outward stroke of the picker stick 14 such engages the resilient member 46 forcing such outward. This, in turn, causes the lever arm to pivot clockwise, wherein, the pawl 52 engages a tooth of the ratchet wheel 36 tending to rotate such in a clockwise direction. The resistance between the brake band 54 and the brake drum portion 35 yieldably resists or retards such clockwise motion thereby, checking the motion of the picker stick 14. On the pick or power stroke of the picker stick the pick shaft 17 is pivoted clockwise in the conventional manner causing the T-shaped member 71 to engage the vertical portion 67 of the connecting arm pivoting such clockwise about the pin 68. Such in turn, causes the pawl 52 to trip backwards over the teeth of the ratchet wheel 36 resetting the lever arm and resilient member 46 to their initial position for the next checking operation.

By utilizing the motion of the pick shaft such minimizes the shock imparted on the lever arm 37 and pawl 52 in resetting such.

One of the reasons that the T-shaped member 71 has the laterally extending flanges 76, is to insure that such strikes the vertical pivotal arm 67 of the connecting arm 64 on the pick stroke. During the weaving operation the sword and the checking device pivot along a path into the paper as shown in FIGURE 1, while the T-shaped member 71 remains stationary on the frame side 10.

While a preferred embodiment of the invention has been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the spirit or scope of the following claims.

What is claimed is:

1. A picker stick checking device for use upon a loom having a pick shaft, and picker stick provided for propelling a shuttle across said loom during weaving, said checking device comprising; a bracket carried by said loom; a brake drum rotatably carried by said bracket and having ratchet teeth; a brake element engaging said brake drum for retarding the rotation of said brake drum in one direction, a pivotal lever carried adjacent said brake drum; pawl means carried by said lever engaging said ratchet teeth of said drum; means carried by said lever for engaging said picker stick on the checking stroke causing said lever to pivot in one direction from an initial position engaging said pawl means with said ratchet teeth of said braking drum to check the motion of said picker stick; a connecting arm engaging said lever; and means moved by said pick shaft for engaging said connecting

arm on the pick stroke of said picker stick for pivoting said lever and pawl in an opposite direction to reset said lever to said initial position, and said means carried by said lever.

2. The picker stick checking device as set forth in claim 1 wherein said means moved by said pick shaft includes an upwardly extending elongated member, said elongated member being attached adjacent the bottom thereof to said pick shaft, and a pair of opposed laterally extending arms integral with the top of said elongated member provided for engaging said connecting arm on the pick stroke of said picker stick to reset said lever and said means carried by said lever.

3. The checking device as set forth in claim 1 wherein said loom is provided with swords and wherein said checking device is mounted by means of said bracket on a sword.

References Cited

UNITED STATES PATENTS

1,619,847	3/1927	Baker et al.	139—162
2,452,955	11/1948	Pressley	139—162
2,956,590	10/1960	Pressley	139—162

JAMES KEE CHI, Primary Examiner