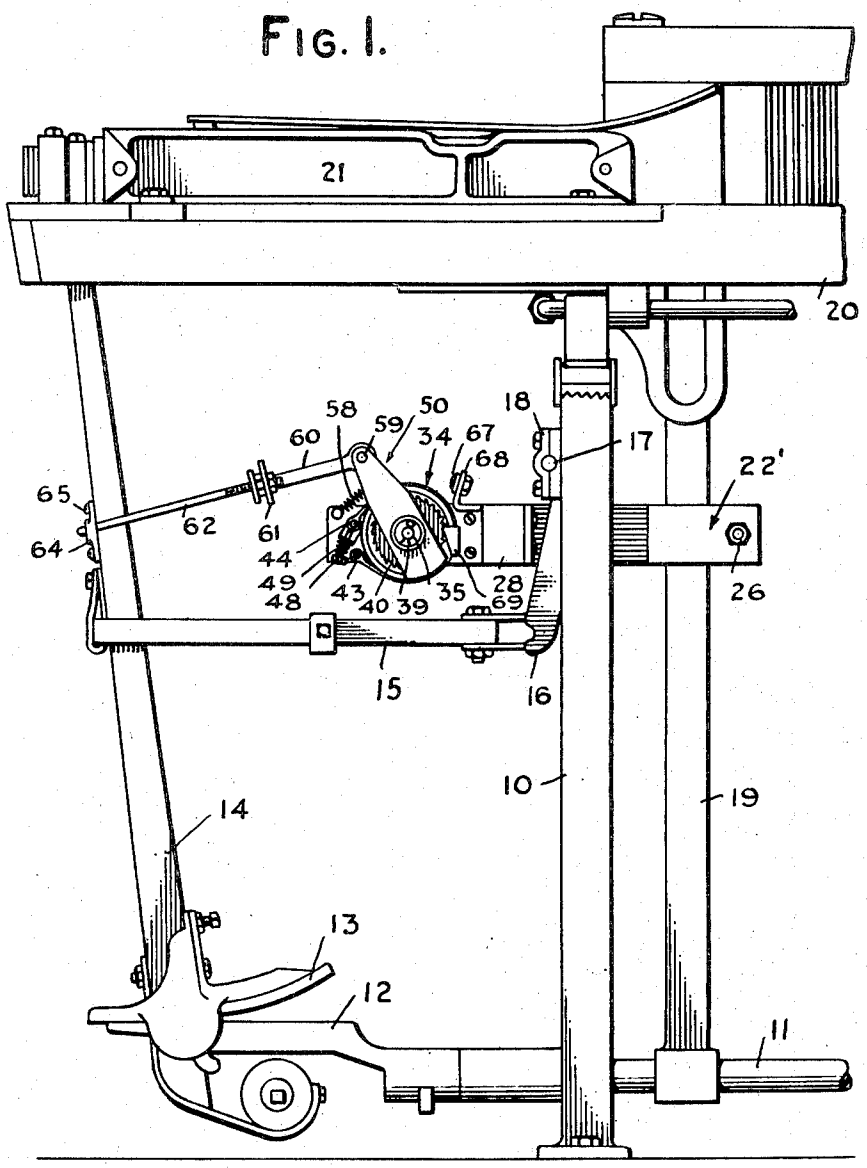
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CHECK FOR PICKER STICK OF LOOMS

Filed March 14, 1946 2 Sheets-Sheet 1

FIG. 1.



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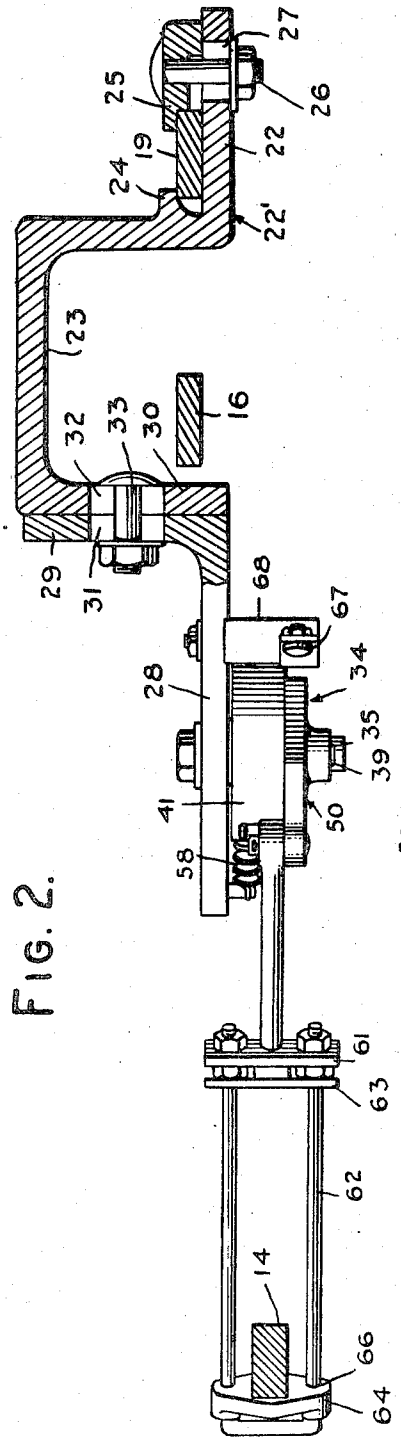


FIG. 2.

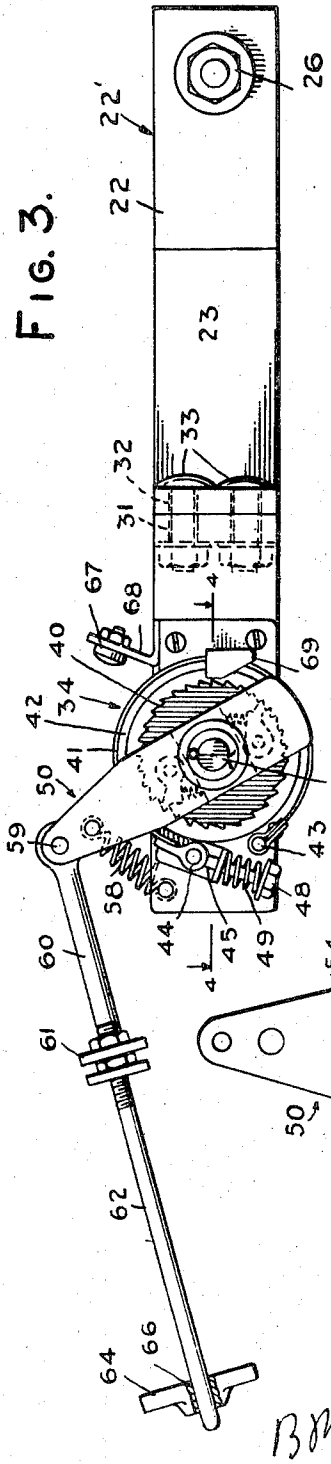


FIG. 3.

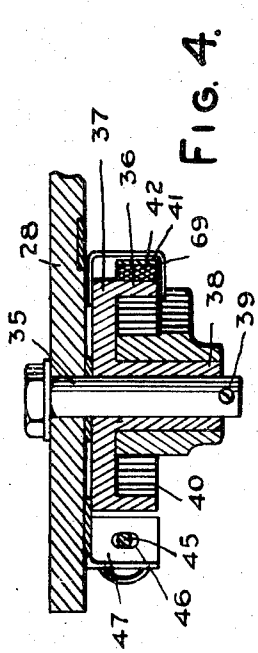


FIG. 4.

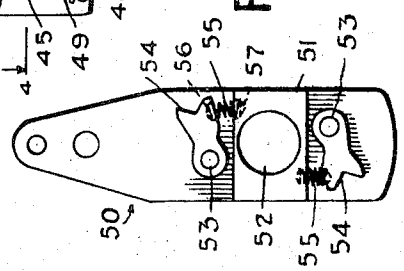


FIG. 5.

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CHECK FOR PICKER STICK OF LOOMS

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Application March 14, 1946, Serial No. 654,452

8 Claims. (Cl. 139—162)

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My invention relates to checks for picker sticks of looms.

An important object of the invention is to provide a device of the above mentioned character whereby the shuttle will be gradually checked by the impact of the shuttle upon the picker stick.

A further object of the invention is to provide a check which is connected with the picker stick, and will exert a braking action against the outward movement of the picker stick but freeing the picker stick for inward movement.

A further object of the invention is to provide a check of the above mentioned character which may be securely mounted upon the sword, to travel therewith and which will not interfere with the operation of the pick arm, and will not cause a rebound action of the picker stick or shuttle.

A further object of the invention is to provide a check of the above mentioned character which may be mounted upon the sword near the longitudinal center of the sword, whereby vibration of the check is materially reduced.

A further object of the invention is to provide a check of the above mentioned character which will properly stop the shuttle when it enters the shuttle box and eliminate rebounding.

A further object of the invention is to provide a check which may be applied to the left or right side of the loom without materially altering the construction of the check.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a fragmentary front elevation of a loom, showing my check in side elevation and applie to the loom,

Figure 2 is a plan view of the check, parts in horizontal section,

Figure 3 is a side elevation of the check,

Figure 4 is a transverse section taken on line 4—4 of Figure 3,

Figure 5 is an inner side elevation of the pawl carrying lever.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my 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 a parallel 12, upon which is mounted the parallel shoe 13 of the picker stick 14. This picker stick is operated by the lug strap con-

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nection 15, connected with the pick arm 16 mounted upon the pick shaft 17. This pick shaft is journaled in suitable bearings 18, carried by the frame side. Rigidly mounted upon the rocker shaft 11 are swords 19, only one being shown, and a lay 20 is rigidly mounted upon the upper ends of the swords 19. The lay is provided at each end with a shuttle box 21. The lay is moved back and forth by the usual crank shaft. The loom thus described is of the conventional type, such as shown in Patent 2,093,226.

My check for the picker stick and shuttle is in the nature of an attachment to be mounted upon the sword. The attachment is mounted upon the sword, near the longitudinal center of the sword, preferably slightly above the lug strap, and the elevation may be somewhat varied. The location is important as it brings the attachment down sufficiently below the lay, whereby the speed of the attachment is considerably below the speed of the lay. It has been found difficult, to mount a check upon the lay, due to excessive vibration. It has also been proposed to mount the check upon the parallel, but this causes improper operation of the picker stick, causing it to throw the shuttle in a zig-zag path. These disadvantages are overcome by the arrangement and location of my picker stick check.

My picker stick check embodies a horizontal bracket 22'. This bracket comprises a horizontal strap or bar 22, provided at its outer end with a laterally offset U-shaped socket 23. The bar 22 has a clamp, including a fixed jaw 24 and an adjustable jaw 25, held in place by a bolt 26, extending through an elongated slot 27. The bar 22 is applied to the front face of the sword 19 and is clamped to the sword by the jaws 24 and 25. The bracket is therefore rigidly mounted upon the sword 19, near its longitudinal center and is arranged near and above the lug strap connection 15, as shown. The bracket comprises an outer horizontal arm 28, carrying a transverse extension 29, to engage the transverse end 30 of the socket 23. The extension 29 and end 30 have elongated horizontal slots 31 and 32 for receiving bolts 33. The arm 28 may therefore be horizontally laterally adjusted for alignment with the picker stick 14.

A brake device 34 is mounted upon the arm 28, and includes a horizontal shaft 35, rigidly secured to the arm 28. Rotatably mounted upon the shaft 35 is a brake drum 36, including an end 37 and a hub 38. The hub 38 is held in place by a cotter pin 39 extending through an opening in the shaft 35 or by any other suitable means. The

brake drum 36 is provided upon its inner face with ratchet-teeth 40, which face counter-clockwise, Figure 3. Surrounding the drum 36 is a brake band 41, having a suitable lining 42. One end of the brake band is attached to a stationary pin or screw 43, secured to the arm 28. The opposite end of the brake band 41 is connected with a coupling 44, pivotally connected with a rod 45, slideably mounted in an opening 46, formed in a stationary bracket 47, rigidly attached to the arm 28. The outer end of the rod 45 is screw-threaded for receiving a nut 48, and a compressible coil spring 49 surrounds the rod 45 and is disposed between the nut 48 and bracket 47. The brake band 41 will yieldingly oppose the counter-clockwise turning movement of the drum 36, Figure 3.

The numeral 50 designates a lever, disposed upon the outer end of the brake drum 36, and provided between its ends with a hub 51, having an opening 52, to rotatably receive the hub 38 upon its inner face. The lever 50 carries pins 53, rigidly secured thereto and slideably contacting with the end 37. These pins 53 have pawls 54, pivoted thereon, and these pawls are moved outwardly into engagement with the ratchet-teeth 40 by springs 55. The outer ends of these springs are held within recesses 56, formed in the pawls 54, while their inner ends are held within recesses 57 formed in the hub 51. When the lever 50 is swung to the left, Figure 3, it will turn the brake drum 36 counter-clockwise, and when the lever 50 is swung to the right, Figure 3, the pawls 54 will trip over the ratchet-teeth 40. A spring 58 is connected with the upper end portion of the lever 50 and is attached to the arm 28, and serves to swing the lever 50 to the left, to keep the pawls 54 in proper engagement with the ratchet-teeth, but this spring is not sufficiently strong to overcome the action of the brake device.

The lever 50 extends above the brake band 41 and has pivotal connection at its upper end, as shown at 59, with a rod 60, having a transverse plate 61 rigidly secured thereto, as shown. This transverse plate has a yoke 62 rigidly secured thereto, and the yoke carries a bumper 63 adjacent to the plate 61. This bumper may be formed of leather or the like. The yoke 62 receives the picker stick 14. A plate 64 is rigidly attached to the picker stick by screws 65 or the like, and this plate has openings 66, slideably receiving the arms of the yoke 62.

The numeral 67 designates a stationary stop or bumper, to limit the inward travel of the lever 50 and this bumper 67 is carried by a bracket 68, secured to the arm 28. A stationary guide 69 engages the outer edge of the brake drum 36 and this stationary guide is rigidly attached to the end 37, as shown.

The operation of the device is as follows:

When the shuttle is entering the shuttle box to the left, Figure 1, the picker stick has been shifted to the outer position so that the plate 64 will engage the closed end of the yoke 62. This movement of the picker stick is effected by the heel spring. When the shuttle enters the shuttle box to the left, it impinges against the picker stick, driving it further outwardly. The picker stick now pulls the yoke 62 outwardly, which swings the lever 50 outwardly or to the left, Figures 1 and 3. The pawls 54 now have holding engagement with the ratchet-teeth 40 and the brake drum 36 is turned counter-clockwise. The brake drum therefore exerts a yielding checking or retarding action upon the lever 50 which is transmitted to the picker stick, and the picker stick will check the movement of the shuttle, without causing the shuttle to rebound. When the picker stick is swung inwardly the plate 64 will slide upon the arms of the yoke 62 until the picker stick engages the bumper 63, at which time the picker stick will move the rod 60 inwardly, returning the lever 50 to the starting position, in engagement with the stop 67. The pawls 54 will trip over the ratchet-teeth 40 when the lever 50 swings inwardly.

While I have shown the check as applied to the left side of the loom, it is obvious that another similar check is applied to the right side. In doing this the bracket 22 is inverted and mounted upon the right sword 19, while the brake drum 36 and associated elements will be mounted upon the arm 28 but the lever 50 and associated elements will also be inverted. In other words, the bracket 22' and all elements carried thereby will be inverted.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, what I claim is:

1. A picker stick check for use upon a loom having a sword, pick arm and picker stick, said check comprising a bracket mounted upon the sword near its longitudinal center, a brake drum rotatably mounted upon the bracket and having internal ratchet-teeth, a brake band mounted upon the bracket and surrounding the brake drum, a pivoted lever arranged near the brake drum, pawl means carried by the lever and engaging the ratchet-teeth, a plate secured to the picker stick and having openings, and a yoke receiving the picker stick and connected with the lever and including arms slideable within the openings of the plate.

2. A picker stick check for use upon a loom having a sword, pick arm and picker stick, said check comprising a support mounted upon the sword, a brake drum rotatably mounted upon the support and having ratchet-teeth, a brake element engaging the brake drum, a pivoted lever arranged near the brake drum, pawl means carried by the lever and engaging the ratchet-teeth, an element secured to the picker stick and having an opening, and a rod slideably mounted within the opening and including members disposed upon opposite sides of the picker stick and also connected with the lever.

3. A picker stick check for use upon a loom having a picker stick, said check comprising a support, a shaft carried by the support, a brake drum having an inner end and its outer end open and a tubular hub rotatable upon the shaft and also having internal ratchet-teeth, a lever mounted upon the open side of the brake drum and having a hub provided with an opening to pivotally receive the tubular hub, a pin secured to the inner face of the lever and extending into the recess of the brake drum, a pawl pivoted upon the pin and engaging the ratchet-teeth, a brake band surrounding the brake drum, means to secure the ends of the brake band to the support, a spring to move the lever in one direction, means to cause the lever to check the picker stick when the picker stick is struck by the shuttle and to subsequently reset the lever, and a bumper arranged to limit the inward movement of the lever.

4. In a loom having a rocker shaft, a sword mounted upon the rocker shaft, a lay mounted upon the upper end of the sword, a parallel mounted upon the rocker shaft, a parallel shoe mounted upon the parallel, a picker stick mounted upon the parallel shoe and extending to the lay, a pick arm mounted upon the frame side below the lay and extending to a point near the longitudinal center of the sword, and a lug strap connection connected with the pick arm and engaging the picker stick near its longitudinal center, the combination with the sword, of a bracket arranged near and above the lug strap connection and mounted upon the sword near its longitudinal center and having a recess for receiving the pick arm, a friction brake device mounted upon the bracket and arranged above the lug strap connection and including a brake drum having internal ratchet-teeth, a brake band surrounding the brake drum, a pivoted lever arranged near the brake drum, pawl means carried by the lever and engaging the ratchet-teeth, and a connecting element for the lever and picker stick and arranged above the lug strap connection and including spaced members arranged upon opposite sides of the picker stick.

5. In a loom having a rocker shaft, a sword mounted upon the rocker shaft, a lay mounted upon the upper end of the sword, a parallel mounted upon the rocker shaft, a parallel shoe mounted upon the parallel, a picker stick mounted upon the parallel shoe and extending to the lay, a pick arm mounted upon the frame side below the lay, and a lug strap connection connected with the pick arm and engaging the picker stick near its longitudinal center, the combination with the sword, of a friction brake device arranged above the lug strap connection, means to mount the friction brake device upon the sword near the longitudinal center of the sword, and a connection between the friction brake device and the picker stick and arranged above the lug strap connection and including spaced outer and inner members disposed upon opposite sides of the picker stick, the outer member being engaged by the picker stick when the picker stick moves to the outer position and the inner member being then spaced a substantial distance from the picker stick so that the picker stick does not engage the inner member until it approaches the inner position.

6. A picker stick check for a loom having a sword and a picker stick, said check comprising a brake drum having internal ratchet-teeth, means to mount the brake drum upon the sword, a lever arranged near the brake drum and mounted upon the means, a pawl carried by the lever and engaging the internal ratchet-teeth, a brake band engaging the periphery of the brake drum and connected with the means, and connecting means between the lever and the picker stick and including members arranged in the path of travel and upon opposite sides of the picker stick, the members being spaced a substantial distance so that there is lost motion between the picker stick and the connecting means when the picker stick moves from engagement with one member toward the other member.

7. In a loom having a rocker shaft, a sword mounted upon the rocker shaft, a lay mounted upon the upper end of the sword, a parallel mounted upon the rocker shaft, a parallel shoe mounted upon the parallel, a picker stick mounted upon the parallel shoe and extending toward the lay, a pick arm mounted upon the frame below the lay and extending to a point near the longitudinal center of the sword, and a lug strap connection connected with the pick arm and engaging the picker stick near its center, the combination with the sword, of a bracket arranged near and above the lug strap connection and mounted upon the sword near its longitudinal center and having a recess for receiving the pick arm, a friction brake device mounted upon the bracket and arranged above the lug strap connection and including a brake drum having internal ratchet teeth, a brake band surrounding the brake drum, a pivoted lever arranged near the brake drum, pawl means carried by the lever and engaging the ratchet teeth, means connecting the picker stick and lever and arranged above the lug strap and causing the friction brake device to check the picker stick when the picker stick is struck by the shuttle, and means to reset the lever.

8. In a loom having a rocker shaft, a sword mounted thereon, a lay mounted upon the sword, a picker stick mounted upon the parallel shoe and extending to the lay, a pick arm mounted upon the frame below the lay and extending to a point near the longitudinal center of the sword, and a lug strap connected with the pick arm and engaging the picker stick near its longitudinal center, the combination with the sword, of a substantially horizontal bracket provided between its inner and outer ends with a laterally projecting recess, the bracket being arranged near and above the lug strap connection and having its inner end mounted upon the sword near its longitudinal center and the recess receiving the picker arm, a friction brake device mounted upon the outer end of the bracket and arranged above the lug strap connection and in substantial alignment with the picker stick, means connecting the picker stick and lever and arranged above the lug strap and causing the friction brake device to check the picker stick when the picker stick is struck by the shuttle, and means to reset the lever.

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