

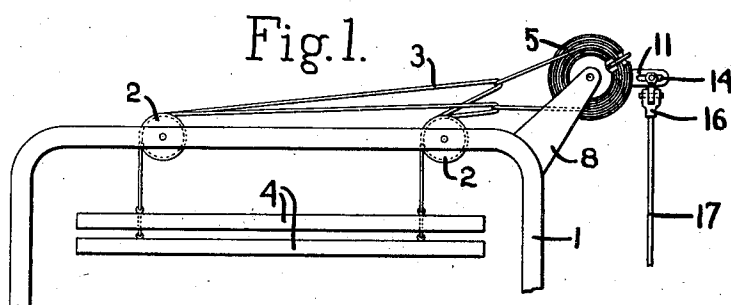
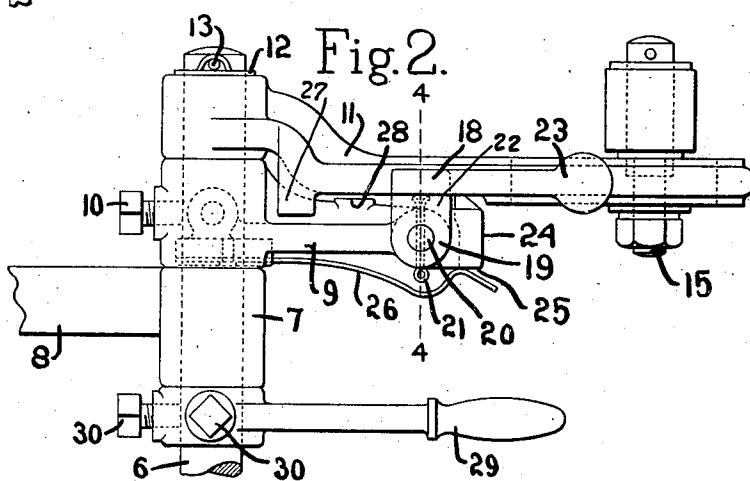
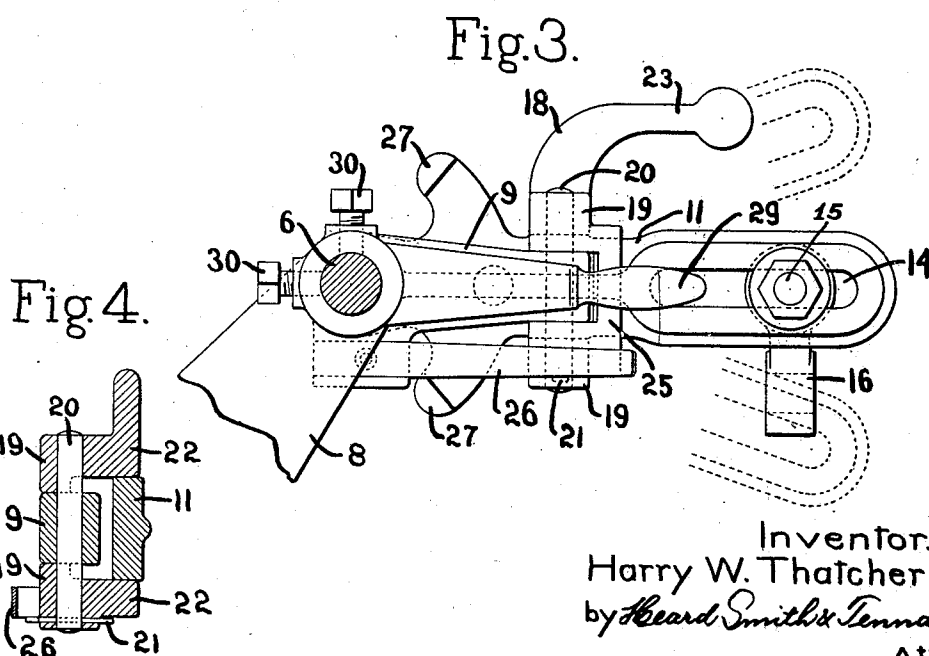
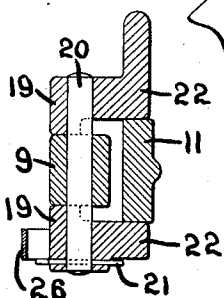
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HARNESS FRAME LEVELING MECHANISM

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HARNESS-FRAME-LEVELING MECHANISM

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This invention relates to a harness motion for looms of that type in which a plurality of harness frames are connected to and operated by an oscillating cone.

5 The object of the invention is to provide a simple and efficient mechanism to enable the harnesses readily to be leveled manually.

These and other objects and features of the invention will appear more fully from the accompanying description and drawings and will be particularly pointed out in the claims.

As the cone type of mechanism for operating the harness frames of a loom is well known and familiar to those skilled in the art, and as the invention is concerned only with a means for enabling the manual leveling of the harness frames to be effected, it is only necessary here to illustrate and describe 15 those portions of a loom with which the invention is directly associated, together with a simple and preferred mechanism embodying the invention.

In the drawing:

25 Fig. 1 is a front elevation of a portion of the loom arch, a portion of a pair of harness frames, and a cone mechanism for operating the same.

Fig. 2 is a top plan view showing the operating connections for the cone, together with a preferred form of the invention embodied therein.

Fig. 3 is a front elevation of the construction shown in Fig. 2.

35 Fig. 4 is a detail in cross section taken on the line 4—4 of Fig. 2.

The loom arch 1 is shown as supporting suitable idler rolls 2 over which flexible connections 3 extend to a plurality of harness frames, the top bars 4 of which only are shown. The harness frames may be operated from the bottom in opposition to the connections 3 in any suitable manner. The flexible connections 3 extend to and are connected to 45 a cone 5 in the usual manner so that when the cone is oscillated on its axis, the harness frames will be raised and lowered as required in the formation of the weave.

The cone 5 is secured to a shaft 6 journaled in suitable bearings 7 on arms 8 extending

upward from the loom arch 1. The driving arm 9 is secured to the shaft 6 as by the set screw 10 and projects radially from the shaft so that this driving arm is mounted for coaxial oscillation with the cone. A rocker arm 11 is journaled on the shaft 6 adjacent the driving arm 9 and is held on the shaft between the driving arm 9 and a washer 12 and pin 13. This rocker arm extends radially from the shaft 6 and at its free end is 60 slotted at 14 and to this slotted end, by means of the bolt 15 and the universal joint 16, is adjustably connected the upper end of a connecting rod 17 extending to suitable means, not shown, by which the arm 11 is rocked or oscillated on its axis from a suitable moving part of the loom.

A latch 18 is mounted on one of the arms and movable into and out of locking engagement with the other arm. In the preferred 70 construction this latch comprises a bifurcated hub 19 straddling the free end of the driving arm 9 and pivotally secured thereto by means of a pivot shaft 20 mounted in the hub and held in place by a cotter pin 21 and journaled in the driving arm 9. The bifurcated hub 19 is provided with laterally projecting ears 22 adapted to embrace the rocker arm 11, as clearly shown in Fig. 4. The latch also 75 comprises an upstanding handle 23 by means of which the latch may be swung on its pivot into or out of locking engagement with the rocker arm 11. The hub of the latch is also provided with flat surfaces 24 and 25 extending at right angles to each other and engageable with a yielding or spring detent 26 80 secured to the driving arm 9 and extending alongside thereof. This detent therefore acts to hold the latch in either its locking or unlocking position. It will thus be seen that when the latch is in locking position, as shown in the drawings, the rocker arm 11 is mounted for coaxial oscillation with the cone and when the latch is in unlocking position, the rocker arm may have a coaxial oscillation with respect to the cone. 85

Interengaging stops are provided on the driving and rocker arms to limit their relative oscillatory movement and for that purpose a pair of stop lugs 27 are shown on wings 100

extending from the rocker arm 11 and adapted to engage with a stop lug 28 on the driving arm 9.

A suitable handle 29 is mounted for oscillatory movement with the cone and for that purpose is shown as secured to the shaft 6 by the set screws 30 and projects radially from the shaft.

The operation of the device will be apparent. Normally the latch 18 is in the position shown, that is, in locking engagement with the rocker arm and held in that position by the yielding detent 26. The rocker arm 11, driving arm 9, handle 29, cone shaft 6 and cone 5 all then oscillate together coaxially under the control of the connection 17, raising and lowering the harnesses as required. When the loom stops and it is desired to level the harnesses, all that it is necessary to do is to swing the latch 18 about its pivot 20 to unlocking position, where it is then held by the detent 26 engaging the surface 24. The operative may then grasp the handle 29 and oscillate the shaft 6 and the cone 5 to level the harnesses. The operation is readily performed by the operative standing in front of the loom and the harnesses may be leveled without turning the loom over or without disconnecting the driving connections to the rocker arm 11.

There is thus presented a very simple, practical, rugged and effective mechanism which readily enables the harnesses to be leveled manually in a cone-actuated loom harness frame mechanism.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. A cone-actuated loom harness frame mechanism comprising a cone mounted for axial oscillation, connections therefrom to the harness frames, a rocker arm mounted for coaxial oscillation with and with respect to the cone, means connected to the rocker arm for oscillating it, a driving arm mounted for coaxial oscillation with the cone, a latch pivotally mounted on one of said arms and movable into and out of locking engagement with the other arm whereby when the latch is swung into unlocking position the harnesses may be leveled manually.

2. A cone-actuated loom harness frame mechanism comprising the construction defined in claim 1, together with a yielding detent for holding the latch in either locking or unlocking position.

3. A cone-actuated loom harness frame mechanism comprising the construction defined in claim 1, together with interengaging stops on said arms to limit their relative oscillatory movement.

4. A cone-actuated loom harness frame mechanism comprising the construction defined in claim 1, together with a handle mounted for coaxial oscillation with the cone

for use in the manual operation of the cone in leveling the harnesses.

5. A cone-actuated loom harness frame mechanism comprising a cone mounted for axial oscillation, connections therefrom to the harness frames, a rocker arm mounted for coaxial oscillation with and with respect to the cone, means connected to the rocker arm for oscillating it, a driving arm mounted for coaxial oscillation with the cone, a handle mounted for coaxial oscillation with the cone, a latch mounted on one of said arms and movable into and out of locking engagement with the other arm whereby when the latch is moved to unlocking position the harnesses may be leveled manually by operating the handle.

6. A cone-actuated loom harness frame mechanism comprising the construction defined in claim 5, together with a yielding detent for holding the latch in either locking or unlocking position.

7. A cone-actuated loom harness frame mechanism comprising the construction defined in claim 5, together with interengaging stops on said arms to limit their relative oscillatory movement.

8. A cone-actuated loom harness frame mechanism comprising a cone shaft mounted for axial oscillation, a cone secured to the shaft, connections from the cone to the harness frames, a rocker arm journaled on the shaft, means connected to the rocker arm for oscillating it, a driving arm secured to the shaft, and a latch pivotally mounted on one of said arms and movable into and out of locking engagement with the other arm.

9. A cone-actuated loom harness frame mechanism comprising the construction defined in claim 8, together with a handle secured to the shaft to enable the harnesses to be leveled manually when the latch is swung to unlocking position.

In testimony whereof, I have signed my name to this specification.

HARRY W. THATCHER.