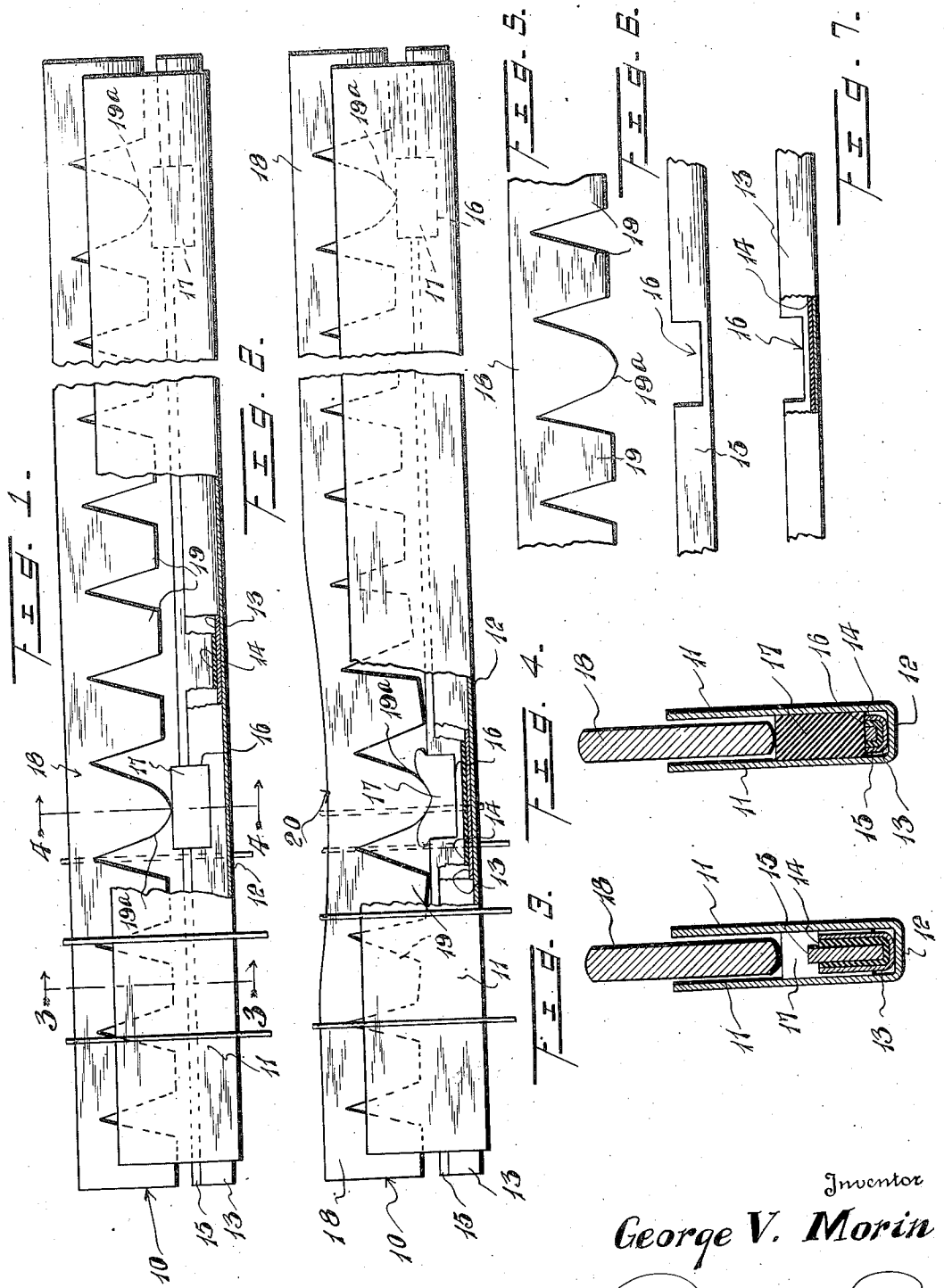
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ELECTRIC STOP MOTION FOR LOOMS

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ELECTRIC STOP MOTION FOR LOOMS

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6 Claims. (Cl. 139—355)

This invention relates to certain new and useful improvements in electric stop motion for looms, of the general type disclosed in Patent 1,959,243, granted to John Lambert on May 15, 1934 and embodies improvements in the art thereover.

While the invention disclosed herein is primarily intended as an electrical stop motion for looms that is rendered operable when foreign matter, such as "floats" appear on warp threads, the same is also applicable to any type of textile machinery wherein a harness bar or lease rod is used, such as slashers, warpers, beamers and the like.

The primary object of this invention relates to a heddle bar that functions as a detector of foreign matter appearing on warp threads, such as "floats" with the heddle bar operated under the influence of the heddle wires to render electrical devices operative on the stop motion for a loom.

A further object of the invention is to provide a heddle bar with cooperating electric contacts that are normally separated by spaced cushion blocks that are adapted to be compressed by one of the contacts to permit engagement of the contacts when floats or other foreign matter appear on the warp threads.

With the above and other objects in view that will become apparent as the nature of the invention is better understood, the same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing:—

Figure 1 is a side elevational view, partly broken away and shown in section of a heddle bar constructed in accordance with the present invention and showing the two electrical contacts normally separated by interposed cushion or rubber blocks;

Figure 2 is a side elevational view, similar to Figure 1, with the resilient contact bar shifted by a heddle wire for compression of a rubber block and engaged between the two contacts for operating the electrical stop motion for the loom;

Figure 3 is a cross-sectional view taken on line 3—3 of Figure 1;

Figure 4 is a cross-sectional view taken on line 4—4 of Figure 1, showing the contacts separated by the interposed rubber blocks;

Figure 5 is a fragmentary side elevational view of the resilient contact bar;

Figure 6 is a fragmentary side elevational view of the rigid contact bar having a cut-out or seat therein for reception of the rubber block spacer; and

Figure 7 is a fragmentary side elevational view, partly in section of the journal support and insulation liner for the rigid contact strip.

The heddle bar designated in general by the reference character 10 comprises a trough member of U-shape in cross-section having side walls 11 and a bottom wall 12. A rigid contact strip and support therefor are mounted in the trough and comprise a channel member 13 of U-shape seated on the bottom wall 12 of the trough with an insulation liner 14 in the channel member that directly receives the contact strip 15, the upper edge of which projects above the channel member 13 and insulation liner 14 as clearly illustrated in Figure 3.

The channel support, insulation liner and contact strip are cut-away at suitably spaced points as shown in Figures 1, 2, 6 and 7 to provide recesses or seats 16 for the reception of elastic rubber or cushion blocks 17 that project above the upper edge of the contact strip 15.

The other section of the heddle bar comprises a resilient contact strip 18 that carries a continuous series of substantially segment-shaped laterally directed contact fingers 19 that normally extend downwardly between the side walls 11 of the trough. The fingers of the resilient contact strip 18 in transverse alignment with the rubber blocks 17 are substantially rounded at their lower ends as at 19a for more effective coöperation with the rubber blocks while the free ends of the remaining contact fingers 19 are cut on straight lines.

The resilient strip 18 and the rigid strip 15 constitute electrical contacts that permit the flow of electrical current to the magnet on a loom with the magnet operating an electrical stop motion. The normal positions of the contact strips 18 and 15 are illustrated in Figure 1, the rubber blocks 17 projecting above the rigid contact strip 15 for holding the contact fingers 19 spaced from the contact strip 15. Heddle wires are associated with the heddle bar in the usual manner and when a "float" or other foreign substance appears on a warp thread, a strain is exerted on the heddle wire for moving the resilient contact strip 18 against pressure exerted by the rubber blocks 17 to assume the position shown at 20 in Figure 2, the contact fingers 19 at each side of the finger that engages the rubber block engages the contact strip 15 for closing an electric circuit for the operation of the electrical stop motion for the loom. When tension on the heddle wire is re-

lieved, the compressed rubber block 17 expands to raise the contact strip 18 and separate the contact fingers 19 from the contact strip 15.

From the above detailed description of the invention, it is believed that the construction and operation thereof will at once be apparent, it being noted that the rubber blocks 17 for normally spacing the contact strips 18 and 15 may be arranged the desired distances apart, the blocks may be readily replaced and the cost of manufacture of such detectors is greatly reduced, while the construction thereof is simplified.

While there is herein shown and described the preferred embodiment of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

I claim:—

1. Means for operating a warp stop motion for looms, comprising a heddle bar and associated heddle wire and said heddle bar being constructed and arranged for closing an electrical circuit by distortion of the heddle wire, the heddle bar including a rigid contact strip and a resilient contact strip normally spaced from the rigid contact strip and cushion blocks interposed between the contact strips and constituting a support for the resilient contact strip for holding the contact strips in inoperative separated positions and adapted to be compressed by movement of the resilient contact strip towards the rigid contact strip for the closing of the circuit.

2. Means for operating a warp stop motion for looms, comprising a heddle bar and associated heddle wire and said heddle bar being constructed and arranged for closing an electrical circuit by distortion of the heddle wire, the heddle bar including a rigid contact strip and a resilient contact strip normally spaced from the rigid contact strip and cushion blocks interposed between the contact strips and constituting a support for the resilient contact strip for holding the contact strips in inoperative separated positions and adapted to be compressed by movement of the resilient contact strip towards the rigid contact strip for the closing of the circuit, the resilient contact strip comprising a series of contact fingers with a finger associated with each cushion block.

3. Means for operating a warp stop motion for looms, comprising a heddle bar and associated heddle wire and said heddle bar being constructed and arranged for closing an electrical circuit by distortion of the heddle wire, the heddle bar including a rigid contact strip and a resilient contact strip normally spaced from the rigid contact strip and cushion blocks interposed between the contact strips and constituting a support for the resilient contact strip for holding the contact strips in inoperative separated positions and adapted to be compressed by movement of the resilient contact strip towards the rigid contact strip for the closing of the circuit, and the rigid contact strip having spaced cut-outs therein forming seats for the cushion blocks with the latter projecting upwardly above the rigid contact strip.

4. Means for operating a warp stop motion for looms, comprising a heddle bar and associated heddle wire and said heddle bar being constructed and arranged for closing an electrical circuit by distortion of the heddle wire, the heddle bar including a rigid contact strip and a resilient contact strip normally spaced from the rigid contact strip and cushion blocks interposed between the contact strips and constituting a support for the resilient contact strip for holding the contact strips in inoperative separated positions and adapted to be compressed by movement of the resilient contact strip towards the rigid contact strip for the closing of the circuit, the resilient contact strip comprising a series of contact fingers with a finger associated with each cushion block, and the rigid contact strip having spaced cut-outs therein forming seats for the cushion blocks with the latter projecting upwardly above the rigid contact strip.

5. Means for operating a warp stop motion for looms comprising a heddle bar having normally spaced contact strips, rubber blocks interposed between the contact strips for holding them in spaced relation and constituting a support for one of the contact strips and one of the contact strips being resilient whereby pressure exerted thereon will effect flexure of the same and compression of the rubber blocks to cause engagement of the contact strips for closing an electrical circuit for operation of the warp stop motion.

6. Means for operating a warp stop motion for looms comprising a heddle bar having normally spaced contact strips, rubber blocks interposed between the contact strips for holding them in spaced relation and one of the contact strips being resilient whereby pressure exerted thereon will effect flexure of the same and compression of the rubber blocks to cause engagement of the contact strips for closing an electrical circuit for operation of the warp stop motion, the resilient contact strip including a series of contact fingers with a finger associated with each rubber spacer block.

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