JOHN H CROWELL PATENTED JUL 25 1871

— ASSIGNOR TO JOHN KENDRICK —

— IMPROVEMENT IN —

MACHINES FOR MAKING WEAVERS HARNESSES.

117389

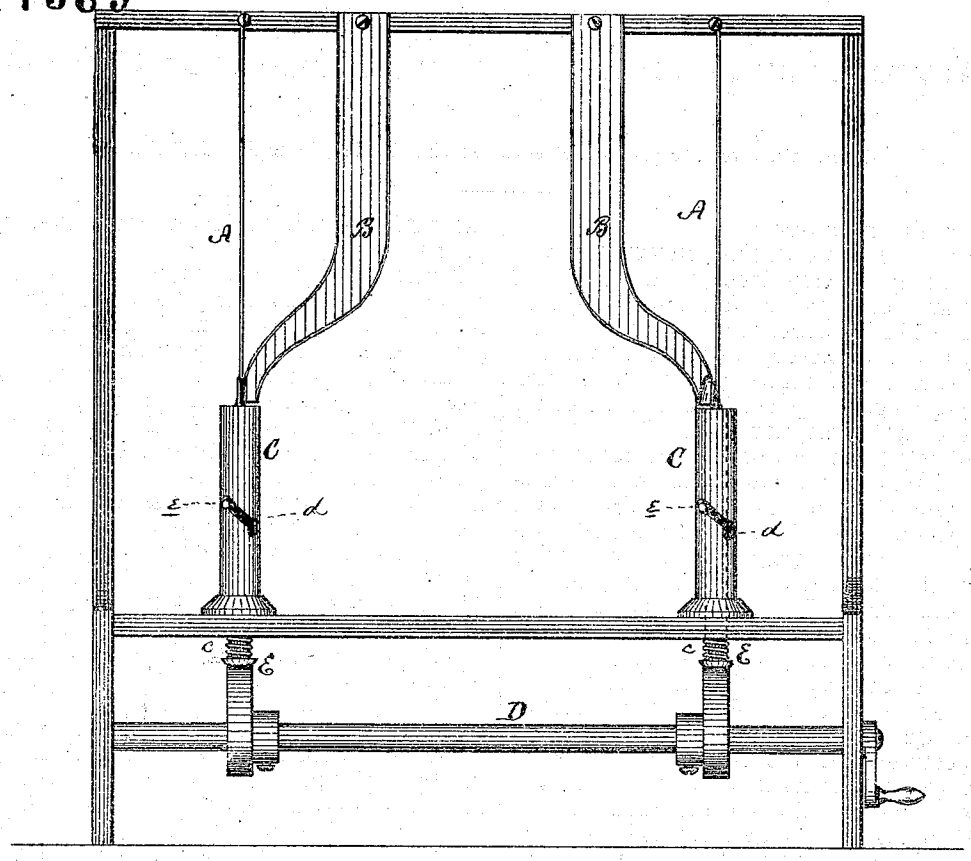

FIG. 1.

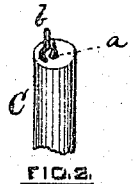

FIG. 2.

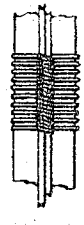

FIG. 3.

FIG. 4.

WITNESSES.

Edwin S Jones

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UNITED STATES PATENT OFFICE.

JOHN H. CROWELL, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO JOHN KENDRICK, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR MANUFACTURING LOOM-HARNESS.

Specification forming part of Letters Patent No. 117,389, dated July 25, 1871.

To all whom it may concern:

Be it known that I, JOHN H. CROWELL, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Machines for Making Weavers' Harness; and I do hereby declare that the following specification, taken in connection with the drawing making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a front elevation of so much of a machine for making weavers' harness as is necessary to show my improvement. Fig. 2 is a view, in perspective, of one of the devices connected with my improvement. Fig. 3 shows the relation of the side band to the shaft in harness as heretofore made. Fig. 4 shows the relation of such side band to the shaft in harness made upon machinery with my improvement.

A weaver's harness, when adjusted in a loom, is worked by means of two shafts, which are inserted through the harness at the top and bottom, respectively. These shafts are furnished with wire eyes, to which the cords connecting the harness with the treadles are attached. These eyes must be inserted in both shafts in the center line of the edge, so that the harness will hang perpendicularly in working.

Heretofore the cords, or side bands, as they are termed, around which the heddles are knit, and which connect the several heddles composing a harness, have been arranged at the extremities of the longitudinal axes of the heddles, the twines being of equal length on each side of the heddles; and when the harness is mounted on shafts such bands occupy the relation to the shaft shown at Fig. 3. This position of the side bands interferes with the shanks of the wire eyes above referred to, and the insertion of the latter in their proper positions crowds the bands sidewise and causes the heddles to work unevenly.

My invention consists of an attachment to a machine for weaving harness, which causes the heddles to be so knotted at the bands that the twines upon one side of the heddles will be longer than upon the other side; or, in other words, the band is set at one side of the longitudinal axes of the heddles, whereby, when the harness is mounted on its shaft, the bands will be in the relation to the shafts shown at Fig. 4, and afford room for the insertion of the eyes, which attach the working-cords to the shaft, in their proper places.

In the drawing, A A represent the side bands or cords, to which each heddle, as it is formed, is knotted. B B represent the usual temples employed in harness-making machines.

The complicated mechanism for weaving the harness is not shown in the drawing; but it is to be supposed, for example, that machinery like that shown and described in the Letters Patent granted to Joseph S. Winsor, January 2, 1855, is employed, and to which machinery my improvement can readily be applied.

C C are the two standards, through a longitudinal channel in which the side bands are drawn as fast as the harness is woven. Such standards are furnished with stationary upright fingers *a*, Fig. 2, against which the heddle bears when the knot attaching it to the band is being drawn tight. I have added to each of these standards C a supplemental movable finger, *b*, which is attached to a spindle or shaft extending through the longitudinal axis of each standard. A transverse shaft, D, is arranged underneath these standards, and is furnished with two cams alike in form, the faces of which bear against the ends of the spindles of the supplemental fingers, as seen at E, Fig. 1. Coiled springs *c* are arranged to cause such spindles to constantly press upon the faces of their cams. In the shell of the standards helical slots are cut, (*d*, Fig. 1,) with which pins projecting from the spindles engage, whereby, of necessity, when, by the action of the cams, the said spindles are raised, the supplemental fingers *b* will be made to describe an eccentric as they are projected above the tops of their standards.

Motion is given to the transverse cam-shaft D in any convenient way which will enable the supplemental finger *b* to be operated at the proper times relatively to the motions of the bobbins which carry the harness-twines used in the said Winsor's machinery. When the twine is about being knotted, by the movement of the bobbin around the band, the supplemental finger *b* is projected above the top of its standard, and temporarily holds the twine outward and away from the side band for the distance of a quarter of an inch, or thereabout, until the knot is drawn tight against the side band, (the cam E being so shaped as to permit the necessary period of rest

for the finger.) By this means the twine, from side band to side band, upon one side of the heddle is longer than it is upon the other side. The finger, after the knot is tied, is sheathed within the standard, to be out of the way of the laying of the twine in the next movement of the bobbin in forming the harness, and rises again to repeat the function before described when the next heddle is knotted.

Harness with their side bands so arranged give an even draft upon the warp, and I consider them greatly superior to those of the old construction.

I claim as my invention and desire to secure by Letters Patent—

In machines for making weavers' harness, the combination of the stationary fingers *a* for gauging the length of the heddles, the side bands A to which the heddles are knotted, and the supplemental movable fingers *b* operating, as described, to temporarily hold the twine upon one side of the heddle while the knot is being drawn to the band for the purpose of increasing the length of the heddle-twine upon one side, substantially as herein set forth.

JOHN H. CROWELL.

Witnesses:
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