

W. G. SHULL.
LOOM HARNESS HOLDING DEVICE.
APPLICATION FILED JUNE 28, 1907.

955,365.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

Fig 1

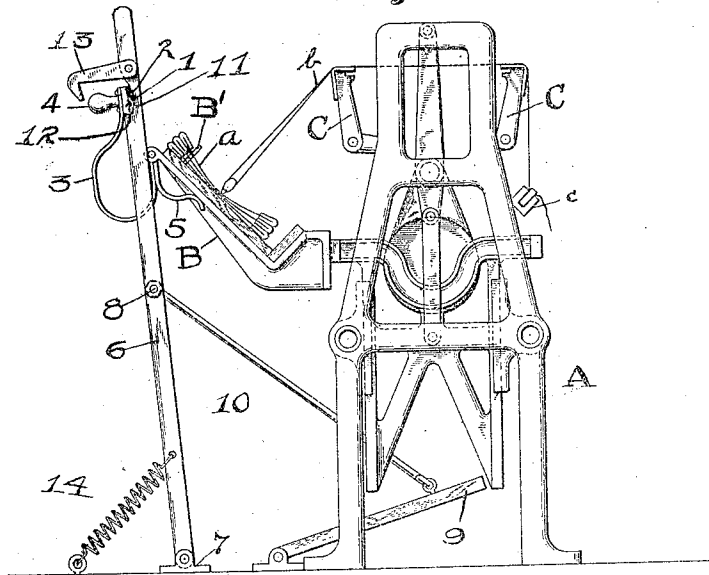
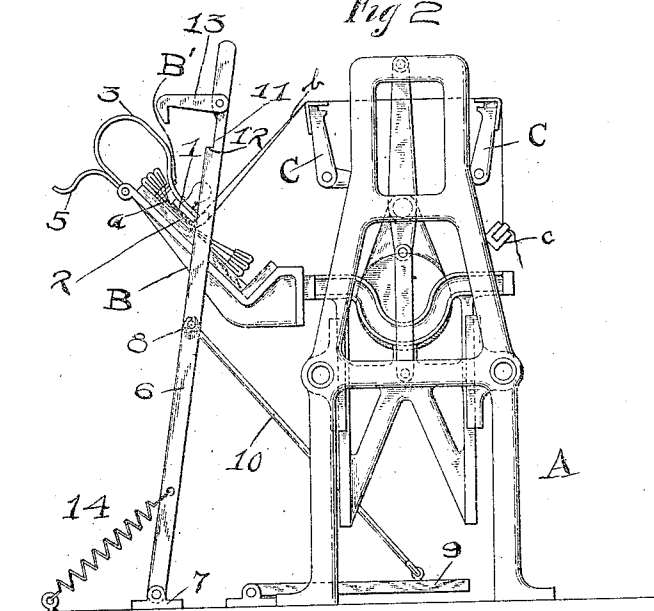


Fig 2



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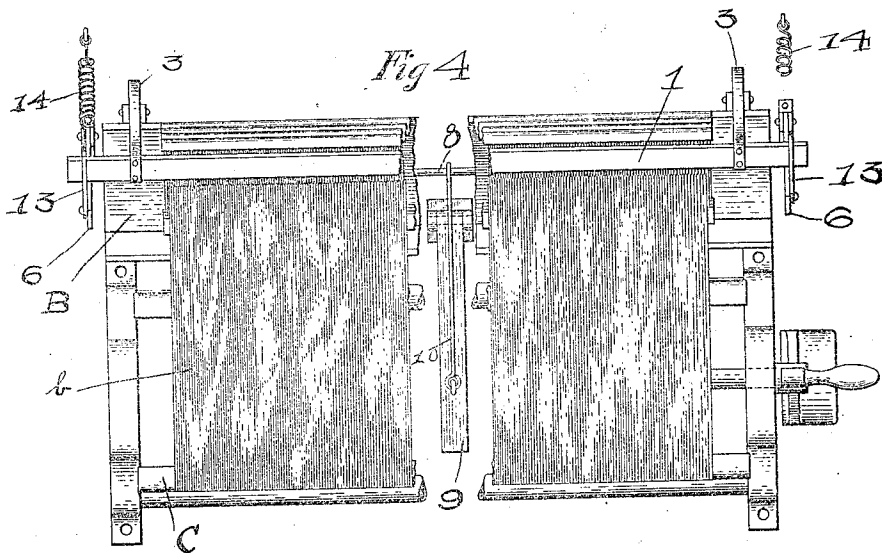
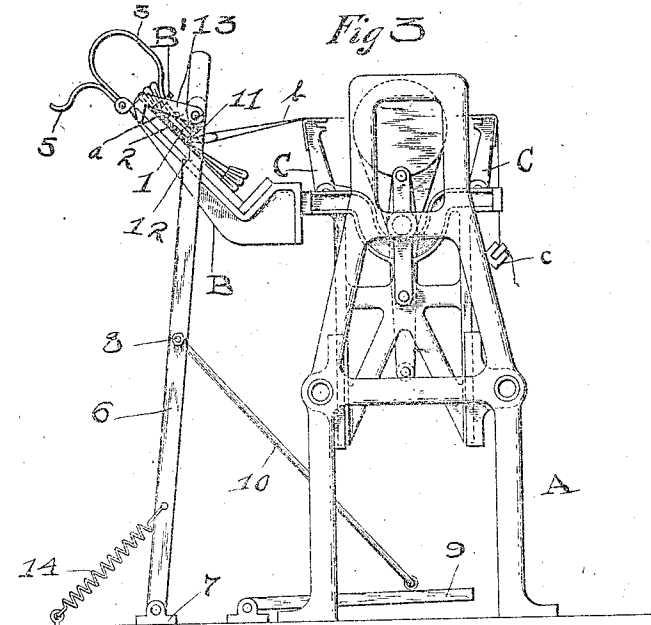
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WALTER G. SHULL, OF NEW BROOKLAND, SOUTH CAROLINA, ASSIGNOR TO BARBER-COLMAN COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION OF ILLINOIS.

LOOM-HARNESS-HOLDING DEVICE.

955,365.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER G. SHULL, a citizen of the United States, residing at New Brookland, in the county of Lexington and State of South Carolina, have invented certain new and useful Improvements in Loom-Harness-Holding Devices, of which the following is a specification.

Preliminary to tying in warps by means of the machines now used for that purpose, a portion of the old warp, with the reed, harnesses, and drop wires, if any, in position thereon, is removed from the loom to the warp-tying machine to be tied to the new warp. When removing the old warp from the loom a strip of cloth is cut off in front of the reed to prevent the ends of the warp from slipping through the reed and the harnesses, and the opposite ends of the warp threads are temporarily held in a sheet and prevented from tangling by any suitable means, such as a common tongue clamp. When being tied to a new warp, the section of the old warp is supported in the warp carriage of the warp-tying machine, said old warp being secured in said carriage by means of a machine termed a loader. The loader comprises a support over which the old warp is stretched, and a movable support for the reed, harnesses, and drop wires.

One of the objects of the present invention is to provide means for securing the harnesses to their support in the loader, in order that the warp may be readily stretched taut across its support.

Another object of the invention is to provide means for automatically releasing the harnesses upon the completion of the operation of securing the old warp in the warp carriage of the warp-tying machine.

In the accompanying drawings, Figure 1 is an end elevation of a loader provided with a harness-holding apparatus embodying the features of my invention. Figs. 2 and 3 are similar views, but showing the parts in different positions. Fig. 4 is a top plan view, with parts broken away, representing the mechanisms in the position they are shown to occupy in Fig. 2.

The loader A comprises a harness carrier B and means including the arms C for supporting the old warp in a sheet.

a refers to the harnesses; b, to the warp threads; and c, to a tongue clamp in which the severed ends of the warp threads are

secured. The harnesses a are hung upon pins B¹ fixed in the harness-carrier B. The loader comprises means for raising and lowering said harness-carrier.

The means for securing the harnesses in place upon the harness-carrier B comprises a bar 1 adapted to overlie said harnesses, said bar being faced with felt or some other soft material 2. The bar 1 is secured to the outer ends of two arms 3 pivotally mounted upon the harness-carrier B at opposite ends of the latter, said arms being preferably curved, as shown, and formed of spring material. A handle 4 fixed to the bar 1 near its middle provides means for manually operating it. A stop arm 5 is fixed to each of the arms 3 in position to strike against the under side of the harness-carrier B when the parts are in the position indicated in Fig. 1.

For moving the bar 1 into and out of engagement with the harness a, I provide means comprising, in this instance, two levers 6 pivotally mounted at their lower ends in bearings 7 secured to the floor or any other suitable support, said bars being connected to move together by means of a cross-rod 8. A treadle 9 is mounted in position to be conveniently reached by the operator when standing at the forward side of the loader, said treadle being connected with the levers 6 by means of a link 10 pivotally connected with said treadle and the cross-bar 8. In the upper portions of each of the levers 6 is formed a notch 11 adapted to receive the bar 1, said notch having a square shoulder or end wall 12. Above the notch 11 is mounted a hook 13 arranged to have a limited pivotal movement with reference to said lever. Springs 14 connected at one end to the levers 6 and at their opposite end to a suitable fixed point, tend to move said levers into the position indicated in Fig. 1.

Assuming the parts to be in the position shown in Fig. 1, the operation is as follows: The harnesses are suspended upon the pins B¹, and the warp threads laid over the supporting means provided for them in the loader. The operator then depresses the treadle 9, pulling the levers 6 forwardly, and carrying the hooks 13 into engagement with the ends of the bar 1. Said bar is thereby thrown over upon the harnesses a, in which position it remains by gravity. The springs 14 tend to hold the levers 6 against the ends of the bar 1, as shown in

Fig. 2. The warp threads may now be pulled taut, the bar 1 holding the harnesses firmly in place. The loader A is then operated to secure the old warp *b* in the carriage (not shown) of the warp-tying machine, during which operation the harness-carrier B is raised into the position indicated in Fig. 3. The springs 14 hold the levers 6 in contact with the bar 1 as the latter rises, said bar entering the notch 11 when the harness-carrier reaches its most elevated position. In the completion of the loading operation, the harness-carrier B is lowered into its initial position. In its descent the harness carrier B carries the bar 1 into engagement with the shoulders 12 upon the levers 6, and is thereby prevented from descending farther. The harness-carrier B continuing to descend, the arms 3 are tilted until the point is reached where the springs 14 are enabled to throw the bar 1 rearwardly out of engagement with the harness, as shown in Fig. 1. The warp carriage, with the old warp, harnesses, reed, etc., secured thereto, is now removed from the loader.

It is evident that various changes may be made in the embodiment herein shown without departing from the spirit and scope of my invention, therefore no undue limitation should be understood from the foregoing detailed description.

I claim as my invention:

1. In an apparatus for holding loom-harnesses, the combination with a support upon which a harness may be loosely laid, of means for engaging the harness to prevent removal from said support; and means for moving said engaging means into operative position.
2. In an apparatus for holding loom-harnesses, the combination with a harness support, of means for engaging the harness to prevent removal from said support; and means for moving said engaging means into inoperative position.
3. In an apparatus for holding loom-harnesses, the combination with a movable support upon which a harness may be loosely laid, of means to engage the harness to prevent removal from said support; and means for moving said engaging means into operative position.
4. In an apparatus for holding loom-harnesses, the combination with a movable harness support, of means to engage the harness to prevent removal from said support; and means for moving said engaging means into inoperative position.
5. The combination, with a movable harness support, of a member adapted to engage the harness; means for moving said member into operative position; and a spring tending to move said member into inoperative position.
6. In an apparatus for holding loom-har-

nesses, the combination with a movable harness support, of a member for engaging the harness to prevent removal from said support; and means for moving said member into the inoperative position during the movement of said harness support in one direction.

7. The combination, with a movable harness support, of a member for engaging the harness; and spring-actuated means for moving said member into the inoperative position during the movement of the harness support in one direction.

8. The combination, with a vertically-reciprocal harness support, of a member for engaging the harness; and spring-actuated means for moving said member into the inoperative position during the descent of the harness support.

9. The combination, with a movable harness support, of a member for engaging the harness; a lever; means on said lever adapted to engage said member for moving it in one direction; means on said lever adapted to engage said member for moving it in another direction; and means for moving said lever.

10. The combination, with a movable harness support, of a member for engaging the harness; a lever; means on said lever adapted to engage said member for moving it in one direction; means on said lever adapted to engage said member for moving it in another direction; a treadle for moving said lever in one direction; and a spring for moving said lever in another direction.

11. The combination, with a movable harness support, of a member for engaging the harness; a lever; a hook on said lever for engaging said member, said lever having a notch therein adapted to receive a portion of said member; and means for moving said lever.

12. The combination with a movable harness support, of a member for engaging the harness; a lever; a hook on said lever for engaging said member, said lever having a notch therein adapted to receive a portion of said member; a treadle for moving said lever in one direction; and a spring for moving said lever in another direction.

13. The combination, with a reciprocal harness support, of a member for engaging the harness; a lever having means for moving said member into the operative position; and means tending to hold said lever in contact with said member, said lever having a notch therein for the reception of a portion of said member.

14. The combination, with a vertically-reciprocal harness support, of a member for engaging the harness; an arm pivoted to said harness support for carrying said member; a lever having a notch therein adapted to receive said member when the harness

support is in its upper position; a spring
tending to hold said lever in engagement
with said member; a hook on said lever
adapted to engage said member when the
5 lever is moved; and a treadle for moving
said lever.

15. A warp-carriage loader comprising
means for supporting a harness, means for

holding a harness to said support, and
means for permitting the release of the
harness.

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Witnesses:

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