

(No Model.)

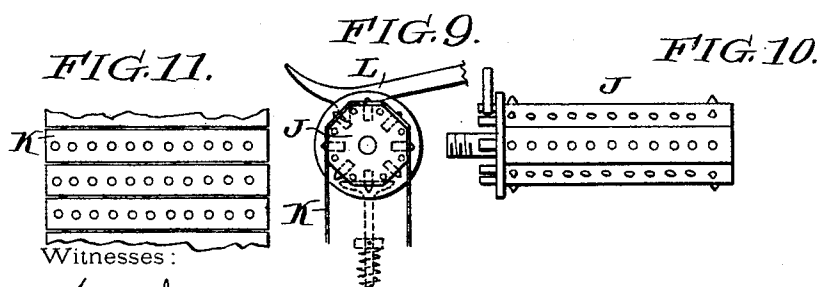
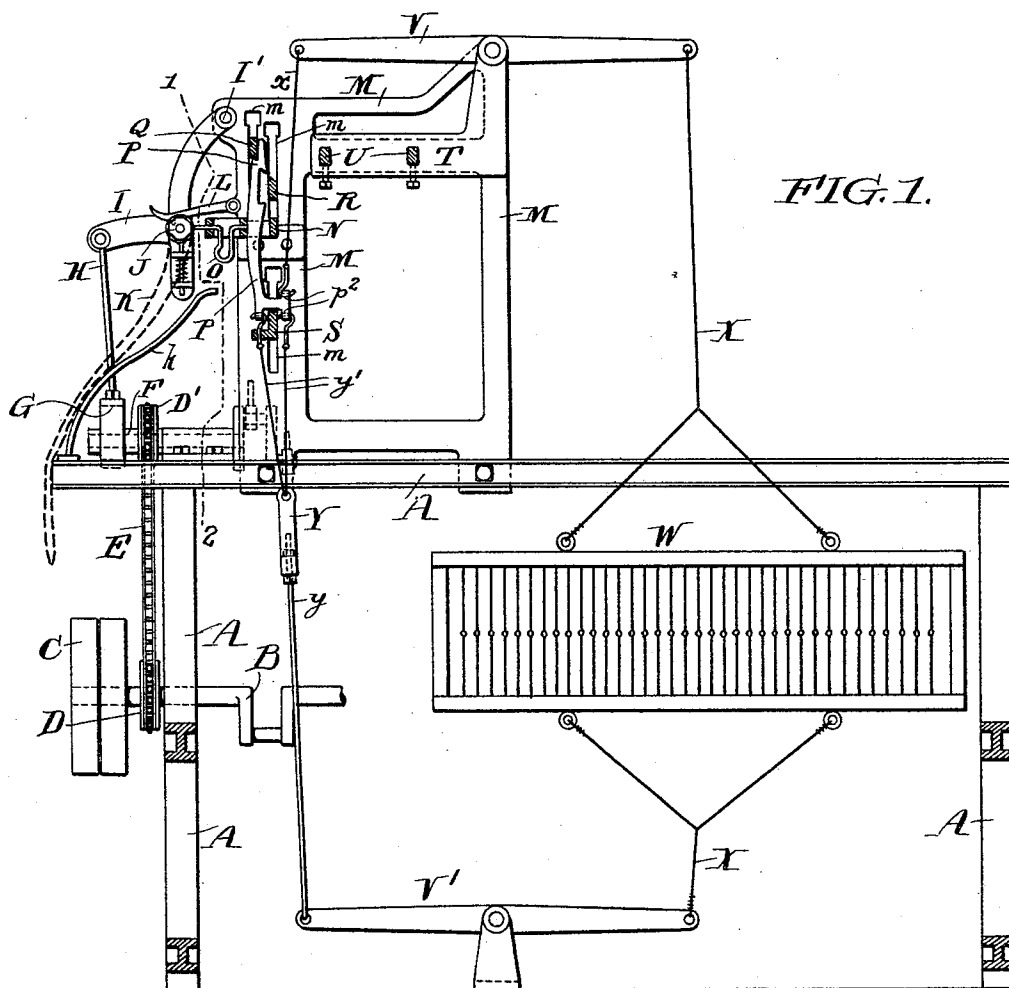
2 Sheets—Sheet 1.

F. BUYCK.

HEDDLE ACTUATING MECHANISM FOR LOOMS.

No. 500,112.

Patented June 27, 1893.



Witnesses :

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F. Brooks.

Inventor.

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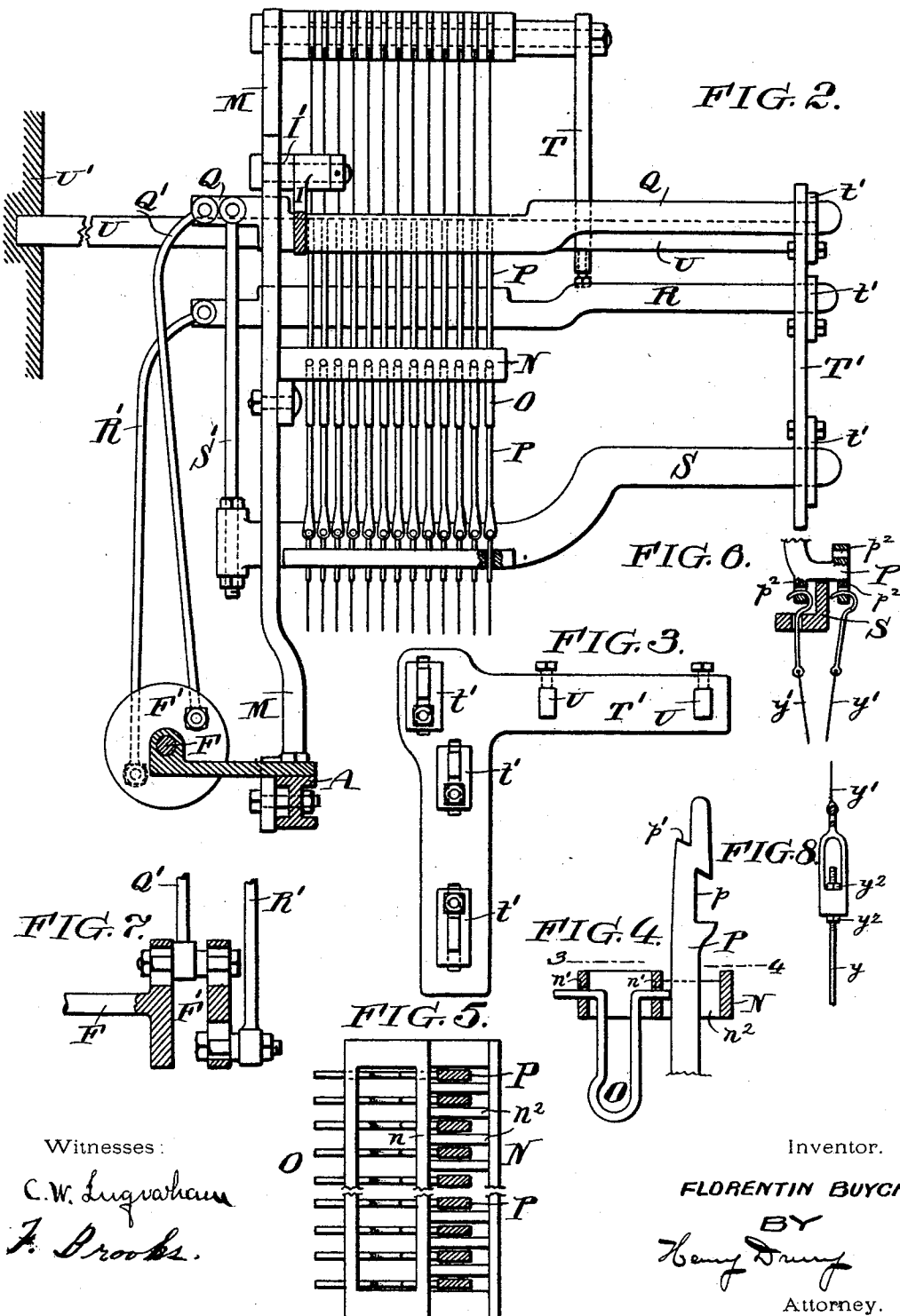
BY
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UNITED STATES PATENT OFFICE.

FLORENTIN BUYCK, OF PHILADELPHIA, PENNSYLVANIA.

HEDDLE-ACTUATING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 500,112, dated June 27, 1893.

Application filed December 7, 1892. Serial No. 454,421. (No model.)

To all whom it may concern:

Be it known that I, FLORENTIN BUYCK, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Heddle-Actuating Mechanism for Looms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention consists in certain new and useful improvements in mechanism for manipulating a series of heddles employed in looms for weaving.

In the accompanying drawings—Figure 1 is a front view partly in vertical section of a portion of a loom having my invention applied thereto. Fig. 2 is an enlarged vertical sectional view on line 1—2, Fig. 1. Fig. 3 is an end elevation of a portion of Fig. 2. Fig. 4 is an enlarged view of a portion of the hook, its guide frame and spring. Fig. 5 is a sectional plan view on the line 3—4, Fig. 4. Fig. 6 is an enlarged detail view of the lower end of the hook. Fig. 7 is a sectional view showing the double crank movement. Fig. 8 is a side elevation of the take-up link. Fig. 9 is an end elevation of the cylinder. Fig. 10 is a side elevation thereof, and Fig. 11 is a side elevation of several cards.

A is the loom frame upon which is mounted the crank-shaft B, driven from pulleys C and carrying chain wheel D adapted to rotate a counter shaft F by means of chain wheel D', and chain E. Counter shaft F carries an eccentric G, which transmits motion to an L-shaped arm I by means of a connecting rod H. This arm I is fulcrumed at I' to the machine frame N and carries the card cylinder J, around which pass the cards K. This card cylinder J is intermittently rotated by means of a hook L pivoted to the frame M and adapted to engage with pins on the end of the cylinder in the usual manner.

k is a wire finger projecting up from the loom frame and forming a guide for the cards.

Mounted upon the frame M is an oblong guide bracket N having a central partition n, partitions n² and orifices n'. (See Figs. 4 and 5.)

O are a series of spring fingers hung to the bracket N by means of the orifices n'.

P are the operating hooks guided in bracket N between the partitions n² and having close to their upper extremities notches p and projecting ledges p', while near their lower extremities are the orifices p² to which are adapted wire hooks terminating in cords y' and x which connect with the heddles W by means of the rocker bars v and v', cords X, take-up link Y and rod y.

The counter shaft F terminates at one end in a double crank F' (see Figs. 2 and 7) said double crank being formed preferably of an inner and outer disk connected together and separated by a bolt set out from the center of the shaft F forming one crank, to which is connected a rod Q'. The outer disk also has a bolt set diametrically opposite with reference to the center of the shaft to the bolt to which the rod Q' is connected and is adapted to receive a rod R'. Both these bolts are clamped to the disks by means of suitable nuts, and rest in slots in said disks so that the crank movement of these bolts may be adjusted as desired. Rods Q' and R' connect these cranks with fulcrumed bars Q and R, which bars, in conjunction with fulcrumed bar S (connected by link S' with bar Q) manipulate the heddles as dictated by the cylinder cards by means of the hooks P and the mechanism described. The bars Q, R and S pass through the frame M and are guided by slots m.

U are supporting bars passing through the frame M into the wall U' (or other suitable fixed structure) and carry bracket T, terminating at one end in a bracket T' having suitable slots for the reception of the bars Q, R, and S, and adjusting plates t' therefor. These adjusting plates t' carry the fulcrum end of the bars Q, R and S, and may be adjusted vertically to fix the relative position of the bars Q, R and S, to a nicety with respect to the notches and lengths of the operating hooks P; thus forming the fulcrum end of the bars Q, R, and S. The bracket T extends upward and forms one end of a support for the rocker bars V, while a projection of the frame M of the machine forms the other support.

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The take-up link $\bar{Y}$ is mounted upon the end of the screw-threaded rod y , and is held in position at one end by set nuts y^2 , while the opposite end is adapted to receive the cords y' from the two lower corners of the hooks P. This device is provided for the reason that by its adjustment all of the heddle cords can be kept taut, and therefore, any slight movement of the hooks is communicated immediately to the heddles. The two cords at the bottom of the hooks are provided to secure the manipulation of the heddles should either of these cords break at this point.

The operation of the machine is as follows:

15 The pattern desired to be produced in the fabric by the manipulation of the heddles is indented upon the cards in the usual manner and the cards placed upon the cylinder, which is journaled upon the fulcrum bracket l and

20 is given an intermittent rock motion by means of the eccentric G on shaft F. The cards then impinge against any of the spring fingers O (as the orifices in said cards may determine) moving the notches p in the hooks P into en-

25 gagement with the reciprocating bar R thus causing these engaged hooks P to be reciprocated vertically with this bar R and so necessarily the heddles W which are connected with the hooks by means of the cord X and

30 other connecting mechanisms shown in Fig. 1. This action of the heddles continues until the engaged hooks P are released from contact with the bar R by the spring fingers O, which in turn are released by the backing off of the

35 cards on the card cylinder. The hooks P when released by the spring fingers drop back by their own weight to the position shown in Fig. 1. It will be seen that the bars Q and S travel together by means of the connecting

40 link S', and that their action is the reverse of that of the bar R by means of the double crank F'—that is to say when the bar R is moving up the bars Q and S will be moving down so that the shed thrown by the heddles W is

45 determined by the engagement of these hooks with either the bar R or the bars Q and S as each heddle has its own independent hook P and each hook is controlled by the movement

of the spring fingers which are acted upon by the cards of the card cylinder as before described.

I claim as my invention—

1. In a machine for actuating loom heddles, vertical hooks P having notches p and p' therein close to their upper ends and adapted to engage with the reciprocating bars Q and R and also having orifices p^2 therein at their lower ends to which are attached suitable cords connecting said hooks P with the heddles, said hooks also being adapted to rest upon and be retained laterally by the reciprocating bar S; in combination with the partition bracket N carrying spring fingers O adapted to impinge against said hooks P and actuated by intermittently rotating cards and card cylinder, bars Q, R, and S, link S', heddles W, rotating cards J and card cylinder K therefor, double crank F', rods Q' and R', and bracket T', all substantially as and for the purposes set forth.

2. In a machine for actuating loom heddles, vertical hooks P having notches p and p' therein close to their upper ends and adapted to engage with reciprocating bars Q and R and also having orifices p^2 therein at their lower ends to which are attached suitable cords connecting said hooks P with the heddles, said hooks also being adapted to rest upon and be retained laterally by the reciprocating bar S; in combination with a partition bracket, N, carrying spring fingers O adapted to impinge against said hooks P and actuated by intermittently rotating cards and card cylinder bars Q, R, and S, link S', heddles W, rotating cards J, and card cylinder K therefor, double crank F', rods Q' and R', and bracket T' having adjustable plates for the reception of the bars Q, R, and S, all substantially as and for the purposes set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

FLORENTIN BUYCK.

Witnesses:

JOHN R. NOLAN,
J. H. RUSSELL.