

(No Model.)

T. C. ORNDORFF.
SHEDDING MECHANISM FOR LOOMS.

No. 507,240.

Patented Oct. 24, 1893.

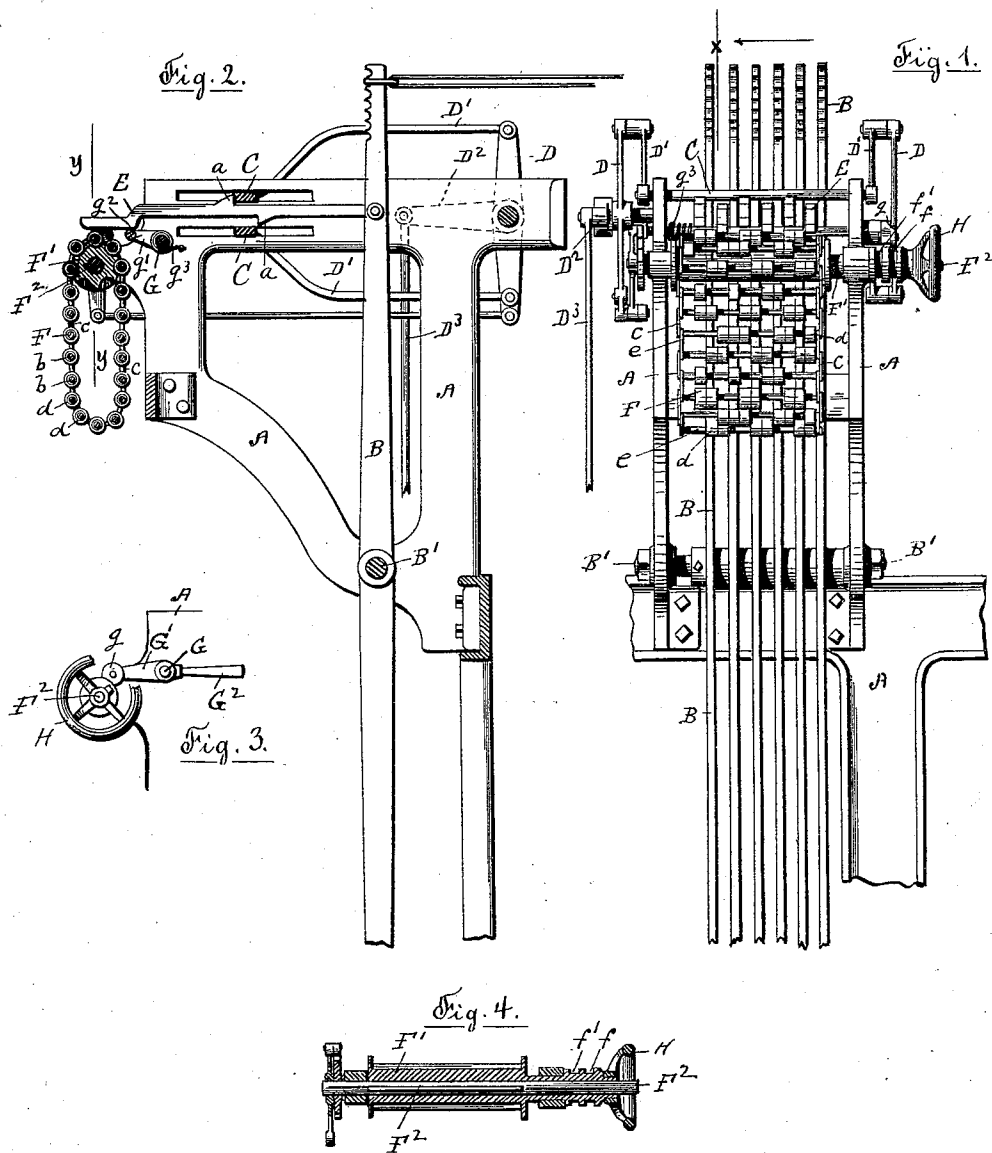


Fig. 5.

1	2	3	4	5	6	7	8	9	10	11	12
-	-	-	X	-	-	-	X	-	-	-	X
-	X	-	-	-	X	-	-	-	X	-	-
-	-	-	X	-	-	-	X	-	-	-	X
X	-	-	-	X	-	-	-	X	-	-	-

Witnesses
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SHEDDING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 507,240, dated October 24, 1893.

Application filed February 1, 1889. Serial No. 293,313. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. ORNDORFF, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Shedding Mechanism for Looms, of which the following is a specification, reference being had to the accompanying drawings, representing such portions of a loom as embody my invention, and in which—

Figure 1 represents an end view of a portion of the shedding mechanism of a loom. Fig. 2 is a sectional view of the same on line X X, Fig. 1. Fig. 3 is an end view of the pattern chain cylinder and also showing the locking mechanism by which it is locked from endwise movement upon the shaft carrying the same. Fig. 4 is a central longitudinal sectional view of the chain cylinder and its shaft on line Y Y, Fig. 2, and Fig. 5 is a diagram showing the different designs of weaving accomplished by the pattern chain by means of its longitudinal movement upon the chain cylinder shaft.

Similar letters and numerals refer to similar parts in the several figures.

My invention relates to the pattern chain operating mechanism or its equivalent mechanism by which the action of the harness shedding mechanism is determined, and it has for its object to allow more than one design to be woven by the use of a single pattern chain, or the design to be entirely changed and the shedding mechanism to be controlled in its action by an entirely different pattern determining mechanism, with the employment of but a single chain. In the accompanying drawings only so much of the harness shedding mechanism is shown as is needful to illustrate the nature and mode of operation of the mechanism embodying my present invention.

A denotes the framework of the loom, B the vertical harness jacks pivoted at B' and actuated by the knives C C having a reciprocating motion in horizontal ways by means of the vibrating lever D, connected with the reciprocating knives by the connecting rods D', D'. The lever D is vibrated by means of its arm D² operatively connected by the rod D³ with an actuating crank upon a shaft of the

loom and not shown in the drawings. The reciprocating knives C C engage the projecting lips or spurs *a a* upon either the upper or under side of the arms E which are pivoted at one end to the harness jacks B and are actuated at their outer ends by the pattern chain F carried upon the chain cylinder F' upon the rotating shaft F², with which the cylinder F' has a spline connection causing the cylinder to be rotated by the shaft F², but allowing it to slide longitudinally upon the shaft.

The pattern chain is of any form known and used, and in the present instance consists of a series of bars *b b* carried at their ends by chains *c c*. Upon the bars *b b* are placed rolls *d* and sleeves or thimbles *e* separating the rolls *d*. As the pattern chain is carried around by the rotation of the cylinder F' the rolls *d* as they are brought under the ends of the arms E raise them into position to allow the projecting spurs *a* upon the upper side of the arms E to be engaged by the upper reciprocating knife and in case thimbles *e* are brought beneath the end of the arms E they are allowed to fall by their own gravity and depressing the arms bring their lower spurs *a* into position to be engaged by the lower reciprocating knife.

So much of the loom mechanism as has been above described, forms no part of my present invention and it has not therefore been shown in detail or fully described as its construction is well known to all, who are conversant with this class of machinery, and its construction and operation will be readily understood sufficiently to show its relation to that portion which embodies my invention.

The jacks are placed upon their supporting stud B' with a space between them equal to the space occupied by each jack, the six jacks shown in the drawings being made to occupy a space equal to that usually occupied by twelve jacks when placed close together. The pattern chain cylinder F' is provided with two grooves *f f'* the distance between the centers of the grooves *f f'* being equal to the distance between the jacks B. A roll *g* is carried upon the arm G' attached to a shaft G journaled in the framework of the loom parallel with the shaft F².

Radial arms *g'* attached to the shaft G carry

a rod g^2 beneath the ends of the arms E, so as to be brought against the arms and to raise them by the rotation of the shaft G in the direction of the arrow, Fig. 3. A torsional spring g^3 is applied to the shaft G in order to hold the roll g in one of the grooves $f f'$, and a lever handle G^2 is attached to the shaft G to enable it to be rotated in the direction of the arrow and to raise the roll g out of the groove f or f' , permitting the chain cylinder to be moved lengthwise upon the shaft F^2 by means of the hand wheel H and the roll g made to engage the other groove upon the chain cylinder. The chain F is built with a double set of rolls and sleeves or thimbles representing two separate designs or patterns, one series of rolls and sleeves being placed in position to actuate the arms E and the alternate series of rolls and sleeves being brought opposite the spaces between the arms E.

Fig. 5, of the drawings represents a diagram illustrating separate and distinct patterns the one indicated in the rows of squares designated by the even numbers from two to twelve and the other pattern indicated by the rows of squares designated by the odd numbers from one to eleven. The pattern chain is furnished with rolls producing the two patterns shown in the diagram placed upon the bars alternately and either set of rows are brought into engagement with the jacks by sliding the chain cylinder to the right or left as already described. As the lever handle G^2 is depressed in order to raise the roll g out of one of the grooves f, f' the rod g^2 is brought against the underside of the levers E, holding them above the rolls upon the pattern chain while the cylinder F' is being moved upon the shaft F^2 .

I do not confine myself to the particular actuating devices for operating the shedding mechanism as shown, as the features, which

are essential to my present invention are applicable to any of the known forms of harness shedding mechanisms in which a pattern chain of any of the known forms are employed, neither do I confine myself to any special form of mechanism for locking the chain cylinder in position.

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

1. The combination with a rotating pattern chain capable of a sliding motion parallel with its axis of rotation and a series of levers operatively connected with the harnesses and having their position controlled by said pattern chain of a rocking shaft G, provided with an arm G' , a roll g , whereby the pattern chain is locked and held from sliding and a lifting rod or bar g^2 , carried by said rocking shaft, whereby said levers are simultaneously raised as the pattern chain is unlocked, substantially as described.

2. The combination with a rotating shaft, of a sleeve carried upon said shaft and having a spline connection therewith and provided with the annular grooves f, f' , and a hand wheel H, said sleeve forming a pattern cylinder, a pattern chain carried upon said cylinder and movable longitudinally therewith, a series of levers whose position is controlled by said pattern chain, a rocking shaft provided with a radial arm carrying a roll g , arranged to enter alternately the grooves f, f' , and lock the pattern cylinders into position, a lifting rod or bar g^2 , carried by said rocking shaft and arranged to raise said levers out of the path of said pattern chain and a torsional spring applied to said rocking shaft, substantially as described.

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