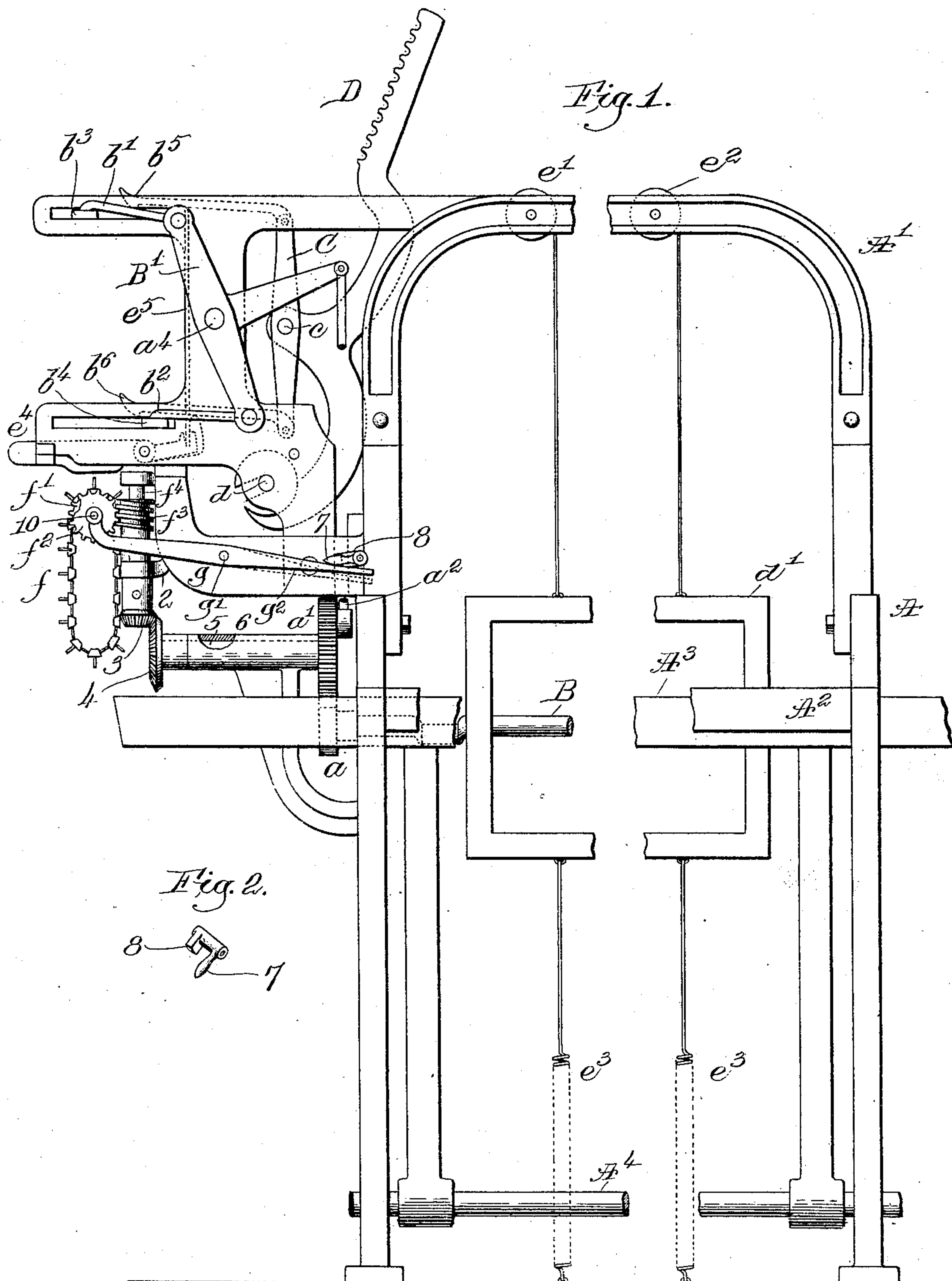


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PATENTED AUG. 20, 1907.

W. H. REDDING.
SHED FORMING MECHANISM FOR LOOMS.

APPLICATION FILED JULY 18, 1905.



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SHED-FORMING MECHANISM FOR LOOMS.

No. 863,644.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Application filed July 18, 1905. Serial No. 270,177.

To all whom it may concern:

Be it known that I, WILLIAM H. REDDING, a citizen of the United States, and a resident of Worcester, county of Worcester, State of Massachusetts, have
5 invented an Improvement in Shed-Forming Mechanisms for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawings representing like parts.

10 This invention in shed-forming mechanism for looms is illustrated in connection with a dobby-head motion, and the object of the invention is to support the pattern-cylinder and its chain so that it may be readily moved from its operative position with relation to the usual
15 weighted fingers or hooks which are distributed by the pattern-cylinder during weaving and the formation of sheds, into its inoperative position whenever it is desired to level the harness-frames through the usual springs, and while the harness-frames are leveled
20 and stationary, the lay may be moved, if necessary, without moving the harness frames out of their level position.

In accordance with my invention to be herein described, the cylinder carrying the pattern-chain is
25 mounted on a movable sustaining device shown as a lever which may be moved when desired by a manually-controlled actuator represented as a hand-operated lever, the movement of which moves the sustaining device to place the pattern-cylinder and its chain either
30 in its operative or in its inoperative position.

Figure 1 in side elevation represents a sufficient part of a dobby head motion with the present improvements added to enable the invention herein to be claimed to be understood; Fig. 2 shows a plan view of the right
35 hand end of the sustaining device and the manually controlled device for moving said sustaining device.

The loom-frame A, head-frame A', breast-beam A², lay A³ connected with the lay rock-shaft A⁴, the crank-shaft B, its gear *a* engaging and turning gear *a'* secured
40 on a shaft 5, said gear having a crank-pin over which is fitted one end of a link *a*² jointed to a three-armed lever B' pivoted at *a*⁴ and connected at its opposite ends by links *b*¹, *b*² with knives *b*³, *b*⁴ sustained in slots in an extension of the head-frame, said knives when
45 moved engaging and moving respectively hooks *b*⁵, *b*⁶ attached, respectively, with the upper and lower ends of connectors C, but one shown, each connector being pivoted, as at *c*, on a notched jack D mounted on a rod or fulcrum *d*, one jack, connections for each har-
50 ness-frame *d'*, the connections *e* leading from the upper ends of the jacks over sheaves *e*¹, *e*² to the harness-frames, and the connections *e*³ shown as springs attached to the lower bars of the harness-frames and the weighted fingers *e*⁴ that are acted upon by pins of the pattern-

chain to be described, said pins moving the projections 55 through needles *e*⁵ and raising and lowering the hooks that they may be engaged by the knives, are and may be all as common in dobby motions, so said parts need not be herein further described.

It will be understood that the invention to be herein 60 described is applicable to any dobby motion or shed-forming mechanism to distribute hooks or jacks that the latter may be engaged by any usual means for actuating jacks and harness-frames.

The invention to be herein described relates more 65 especially to means whereby the pattern-chain or surface may be readily moved into its operative position where it is rotated in usual manner to distribute the usual weighted jacks to the formation of sheds, or be dropped into its inoperative position where it may be 70 rotated and not distribute the jacks.

It will be remembered in all looms that the pattern-chain or surface is moved when the lay is moved and, as herein shown, the pattern-chain is moved continuously with or from the crank-shaft of the loom, and this 75 whether the pattern-cylinder and its chain occupy their operative or inoperative positions. The pattern-chain or surface *f* of any usual character surrounds and is moved by a pattern-cylinder *f'* having its shaft 10 provided with a worm-gear *f*² and sustained in the 80 outer ends of a sustaining device *g* pivoted at *g'* and having a backwardly-extended arm *g*² that has co-acting with it a manually-controlled actuator shown as a hand-piece 7 having a finger 8. The worm-toothed gear *f*² of the pattern-cylinder derives its motion from a 85 worm *f*³ on a shaft *f*⁴ sustained in bearings 2 of the head-frame, said shaft being provided at its lower end with a beveled gear 3 that is engaged and rotated by a beveled gear 4 carried by the shaft 5, before referred to.

Fig. 1 of the drawings shows the pattern-cylinder and 90 its chain in their inoperative positions, and inasmuch as the worm *f*³ engages the worm-gear *f*², the pattern surface and chain, it will be understood, will be rotated continuously if the crank-shaft is rotated, and so while the pattern-chain occupies its inoperative position, and 95 while the heddle-frames are leveled, due to the action of the spring *e*³, all of the hooks *b*⁵, *b*⁶ occupying their elevated positions due to the overbalancing of the fingers *e*⁴ not sustained by the projections of the pattern-chain, may be rotated and the lay actuated without in 100 any way disturbing the positions of the harness-frames. This is a matter of very great convenience in the operation of the loom and its adjustments.

To put the pattern-chain from its inoperative position, Fig. 1, into its operative position, it is only neces- 105 sary to turn the hand-piece 7 down past the arm *g*² of the sustaining device causing the projection 8 to act on said arm *g*² and turn the sustaining device elevating the

cylinder to place the pins of the pattern-chain in position to contact with the usual fingers e^4 as the cylinder and chain are revolved by the worm f^3 .

Having fully described my invention, what I claim
5 as new and desire to secure by Letters Patent is:—

1. In shed-forming mechanism for looms the combination with fingers or hooks operative in the formation of sheds, a pattern-chain, a pattern cylinder, and means for moving said cylinder and pattern-chain into operative or
10 inoperative position at will, and means for rotating said pattern cylinder in each of its positions.

2. In shed forming mechanism for looms, a series of fingers or hooks, a pattern-cylinder having a pattern-chain, sustaining means for said pattern-cylinder, and manually-
15 controlled means for placing said pattern surface or chain in its operative or inoperative position at will.

3. In a dobby head motion, a pair of knives, a jack, a connector carried by said jack, hooks attached to opposite ends of said connector, fingers for moving said hooks,
20 a pattern-surface, and means to place said pattern-surface in its operative position with relation to said fingers or to place said pattern-surface at will in its inoperative position with relation to said fingers and means for rotating said pattern cylinder in each of its positions.

25 4. In a loom, a crank-shaft, a lay actuated by said crank-shaft, a pattern-cylinder provided with a chain, said pattern-cylinder having a worm-toothed gear, a series of fingers adapted to be actuated by the pins of the pattern-

chain to effect the proper formation of sheds, means intermediate said pattern-cylinder and said crank-shaft to rotate the pattern-cylinder continuously, and means to place said pattern-cylinder and pattern chain at any time in its inoperative position with relation to said fingers, whereby the formation of sheds may be suspended while the crank-shaft and lay are actuated.

5. In a loom, a lay, means for actuating it, dobby mechanism to form a shed, a pattern-cylinder having a pattern-surface, means to revolve said pattern-cylinder and surface, and manually controlled means to put said pattern-cylinder and surface in their inoperative relation to the dobby
40 mechanism to suspend the operation of the dobby mechanism while the lay is moved by the operator.

6. In shed-forming mechanism for looms, a series of fingers or hooks, a pattern cylinder, having a pattern surface, sustaining means for said pattern cylinder, means for moving said pattern cylinder sustaining means to place the
45 pattern cylinder in its operative position with relation to said fingers and for lowering the said pattern cylinder into its inoperative position to allow said fingers to drop so that the shed may be evened, and means to actuate said
50 pattern cylinder both when said sustaining means occupies its elevated or its lowered position.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM H. REDDING.

Witnesses:

JOHN R. FILTON,
ALFRED SEAL.