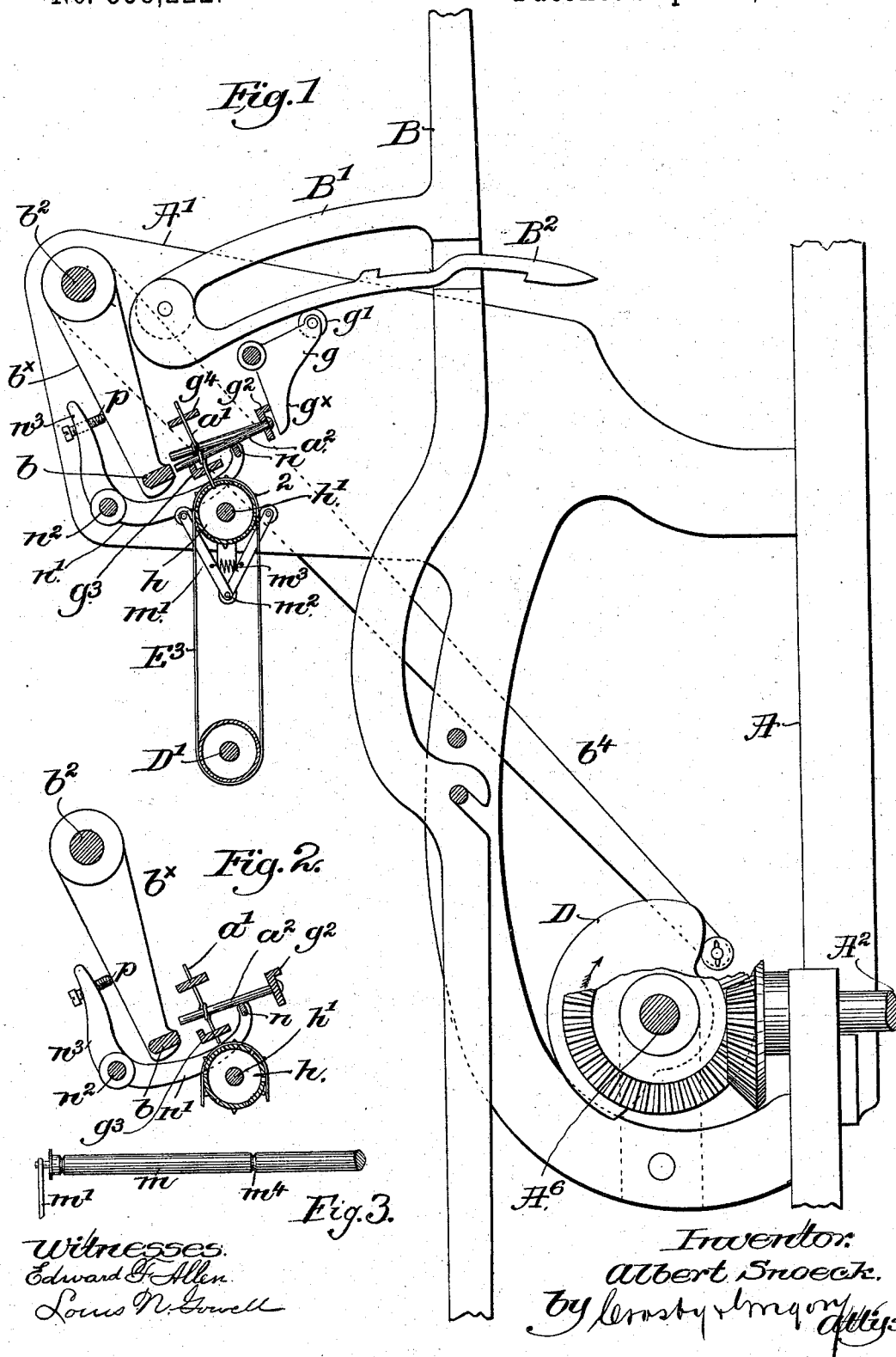


(No Model.)

A. SNOECK.
SHEDDING MECHANISM FOR LOOMS.

No. 558,222.

Patented Apr. 14, 1896.



UNITED STATES PATENT OFFICE.

ALBERT SNOECK, OF HARTFORD, CONNECTICUT.

SHEDDING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 558,222, dated April 14, 1896.

Application filed June 28, 1892. Renewed September 5, 1895. Serial No. 561,753. (No model.)

To all whom it may concern:

Be it known that I, ALBERT SNOECK, a subject of the King of Belgium, residing at Hartford, Hartford county, Connecticut, have invented an Improvement in Shedding Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

This invention has for its object to improve and simplify the class of loom represented in my application, Serial No. 421,960, filed on the 18th day of February, 1892, that application being chiefly for improvements in the shedding mechanism. In that application the cylinder or barrel carrying the pattern-surface, besides its movement of rotation, had also a swinging motion, and it was during the swinging movement thereof that the pattern-surface was made to act against the ends of certain needles, which by their movement put into or out of operative position certain selecting-rods to be thereafter struck by what was designated as a "jack-elevator" to effect the distribution of the ordinary hooked jacks for the shed to be made. Desiring to reduce the wear and strain on the pattern-surface (preferably a thin web of paper or combined paper and cloth) to a minimum, and thus enable the said pattern-surface to be used for an indefinite time without strain or injury, I have devised means whereby the pattern cylinder or barrel has only a rotary movement, and preparatory to such movement of the pattern cylinder or barrel to bring into working position a new row of holes in the pattern-surface I by simple devices elevate bodily one end of all of the selecting-rods, and in so doing I positively remove quickly from the pattern-surface all the needles which at any time cooperate with it for putting into position any selecting-rod. The change of position of the pattern-surface having been effected, the selecting-needles are permitted to descend for the slight distance that they are elevated. These needles, the ends of which are opposite holes in the pattern-surface, will enter such holes, while other needles will rest upon the pattern-surface. As represented in the accompanying drawings, the selecting-rods connected with these needles

which enter holes in the pattern-surface are the ones which are left in active position to be struck by the jack-elevator preparatory to making the next shed, and the selecting-rods, cooperating with the needles having their ends resting against the pattern-surface, are put out of operative position with relation to the said jack-elevator; but it will be understood that the converse of this—viz., putting into active position the selecting-rods which have needles resting upon the pattern-surface—would be within the scope of this invention.

It will be understood in the operation of the devices to be herein described that the ends of the needles are lifted above the pattern-surface only far enough to let the paper pass without scratching against the ends of the needles, and consequently when the said needles are again permitted to descend their movement is so little that they have no opportunity to gain any momentum, and consequently the only strain upon the paper is that due simply to the weight of the needles and the slight weight of a portion of the selecting-rods supported by each needle. On the contrary, in the apparatus represented in the application referred to the movement of the pattern-surface forward to strike against the ends of the needles was very considerably greater than is herein necessary and in some cases the paper was liable to be injured.

Figure 1 represents a sufficient portion of a loom of well-known construction with my improvements added to enable the same to be understood. Fig. 2 is a detail showing the position of parts at the time that the pattern-surface is being moved. Fig. 3 is a detail showing a part of the roll employed to keep the pattern-surface seated upon its actuating cylinder.

Referring to the drawings, A represents part of the end of a loom-frame; A', an extension therefrom; B, an upright harness-lever having a lateral projection B', upon which is represented as pivoted an ordinary hooked jack B², the said jack being of any usual or suitable construction in practice, having cooperating with it suitable elevators and depressors, so that the jacks when distributed prior to the production of each shed are moved in the one or the other direction, as

may be desired in the formation of the shed then next to be made.

In Fig. 1 immediately below the hooked jacks I have pivotally mounted a series of fingers g , made as elbow-shaped levers, which in practice will preferably have, simply to avoid friction, antifriction-rolls g' , the said fingers having depending ends g^x , which normally rest against a guide-bar g^2 . The guide-bars $g^3 g^4$ are provided with suitable holes to receive and guide a series of needles a' , having eyes, in which eyes and in holes in a guide-bar g^2 are free to slide the series of selecting-rods a^2 when acted upon by the jack-lifting device b to be described.

E^3 represents a belt-like pattern-surface, which may also be the same as provided for in my said application—i. e., of paper, or paper and cloth, or other flexible material—the same being of any length desired. This pattern-surface is herein represented as extended over a substantially cylindrical pattern-cylinder h , (shown as a substantially circular drum mounted on a shaft h^2), which may be rotated in any usual manner commonly practiced when rotating the pattern-cylinders in looms, and as such pattern-cylinders rotated in fixed bearings are old I have considered it unnecessary to herein show such mechanism, because many varieties are well known.

The pattern-surface is aided in maintaining its position on the pattern-cylinder by means of a suitable tension-drum D' , and the pattern-surface in practice will and may have holes, as provided for in my said application, to be entered by suitable pins or projections, as 2, to thereby insure the proper travel of the pattern-surface.

The particular construction of each shed depends upon the particular holes which may be uppermost and immediately under the needles a' , and, as herein represented in the drawings, these selecting-rods which have co-operating with them needles which enter holes in the pattern-surface are those which are left within the range of movement of the jack-elevator b , which in practice consists of a bar carried by two like arms b^x , secured to a rock-shaft b^2 , having a long arm b^4 , which is acted upon by a cam D of a shaft A^6 , substantially at right angles to the usual lay or crank shaft A^2 , the shaft A^6 deriving its movement from the crank-shaft A^2 by or through suitable bevel or other gears, which are partially represented in Fig. 1. This cam and the jack-elevator deriving its movement from it are and may be also substantially as in my said application.

The arms carrying the jack-elevator b are herein made to constitute the actuating devices for the extractor n , the latter, as herein represented, consisting, essentially, of a bar represented in cross-section as carried by two like arms n' , secured to a rock-shaft n^2 , having other arms n^3 , which are struck by the arms before referred to as carrying the jack-elevator, the extractor being moved while the

jack-elevator is retiring from its operating position.

The extractor acts against the selecting-rods and lifts them all, as represented in Fig. 2, so that the ends of the needles are extracted from the holes in the pattern-surface and the ends of all the needles are left just sufficiently above the pattern-surface as to enable the latter to be moved without scratching against the ends of the needles.

In Fig. 2 I have shown a space between the needle therein represented and the pattern-surface, but the space therein is exaggerated and greater than necessary. To aid in keeping the pattern-surface upon the cylinder employed to move it and also to aid in keeping the pattern-surface smooth all the way across and avoid any possibility of its bulging for any reason, I have added a pressure-roll m . This pressure-roll may have its ends journaled in suitable arms m' , pivoted at m^2 , the roll being kept against the pattern-surface by or through the force of a suitable spring, as m^3 . This roll will have suitable annular grooves m^4 to receive the pins 2, which engage and move the pattern-surface. In practice I may use one or more of these pressure-rolls.

I have combined with the arm b^x , carrying the jack-elevator b , an adjusting device p , (shown as a screw connected to the arm n^3 of the extractor,) rotation of the adjusting device in one or the other direction providing for any defined space between the ends of the needles and the endless pattern-surface.

I have herein represented my invention as applied to operating a jack of one well-known form of loom; but it will be understood that my invention may be applied to operate the jacks in any form of loom without departing from my invention, and by the term "jacks" as employed in the claims I intend to include any jacks instrumental in determining the raising and lowering of the harness-frames.

I claim—

1. In a loom the following instrumentalities, viz: a series of harness-levers; a series of notched jacks connected thereto; a thin flexible belt-like pattern-surface provided with holes; means to carry said pattern-surface; a series of needles having eyes acted upon directly by said pattern-surface; a series of selecting-rods carried by and sliding longitudinally in the eyes of said needles; a series of pivoted fingers acted upon by the selecting-rods and acting against the jacks; a jack-elevator to act directly against certain of the selecting-rods to effect the lifting of certain of the notched jacks according to the requirements of the pattern-surface, and with an extractor working against the selecting-rods to lift them and the needles from the pattern-surface preparatory to its rotation, substantially as described.

2. In a loom the following instrumentalities, viz: a series of harness-levers; a series of notched jacks connected thereto; a thin flexible belt-like pattern-surface provided

with holes; a series of needles having eyes
acted upon directly by said pattern-surface;
a series of selecting-rods carried by and slid-
ing longitudinally in the eyes of said needles;
5 a series of elbow-shaped pivoted lever-like
fingers acted upon by the selecting-rods and
in turn acting against and lifting the jacks;
and a jack-elevator to act directly against
certain of the selecting-rods to effect the dis-

tribution of the jacks, substantially as de- 10
scribed.

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

ALBERT SNOECK.

Witnesses:

GEO. W. GREGORY,
FRANCES M. NOBLE.