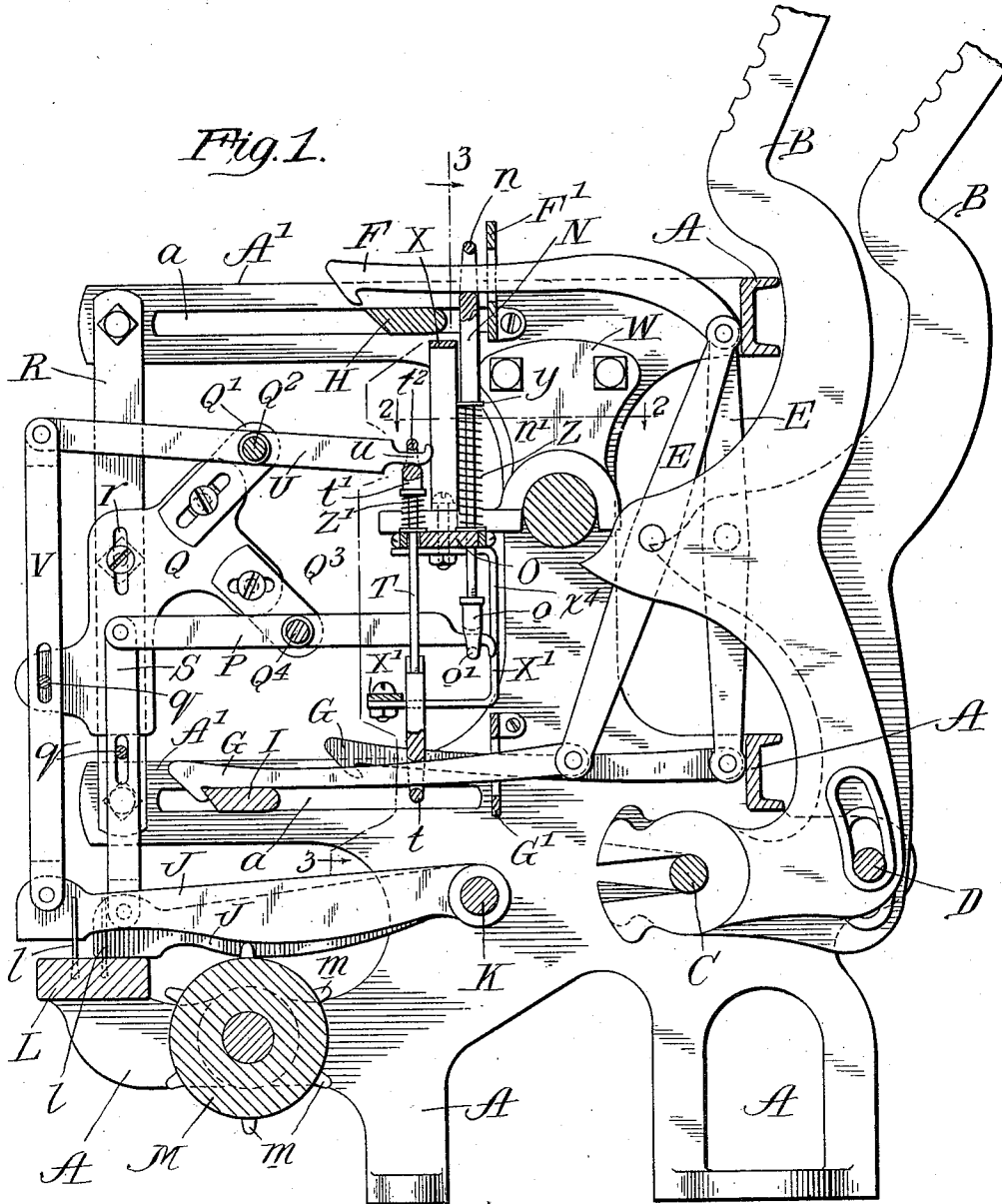


APPLICATION FILED MAY 15, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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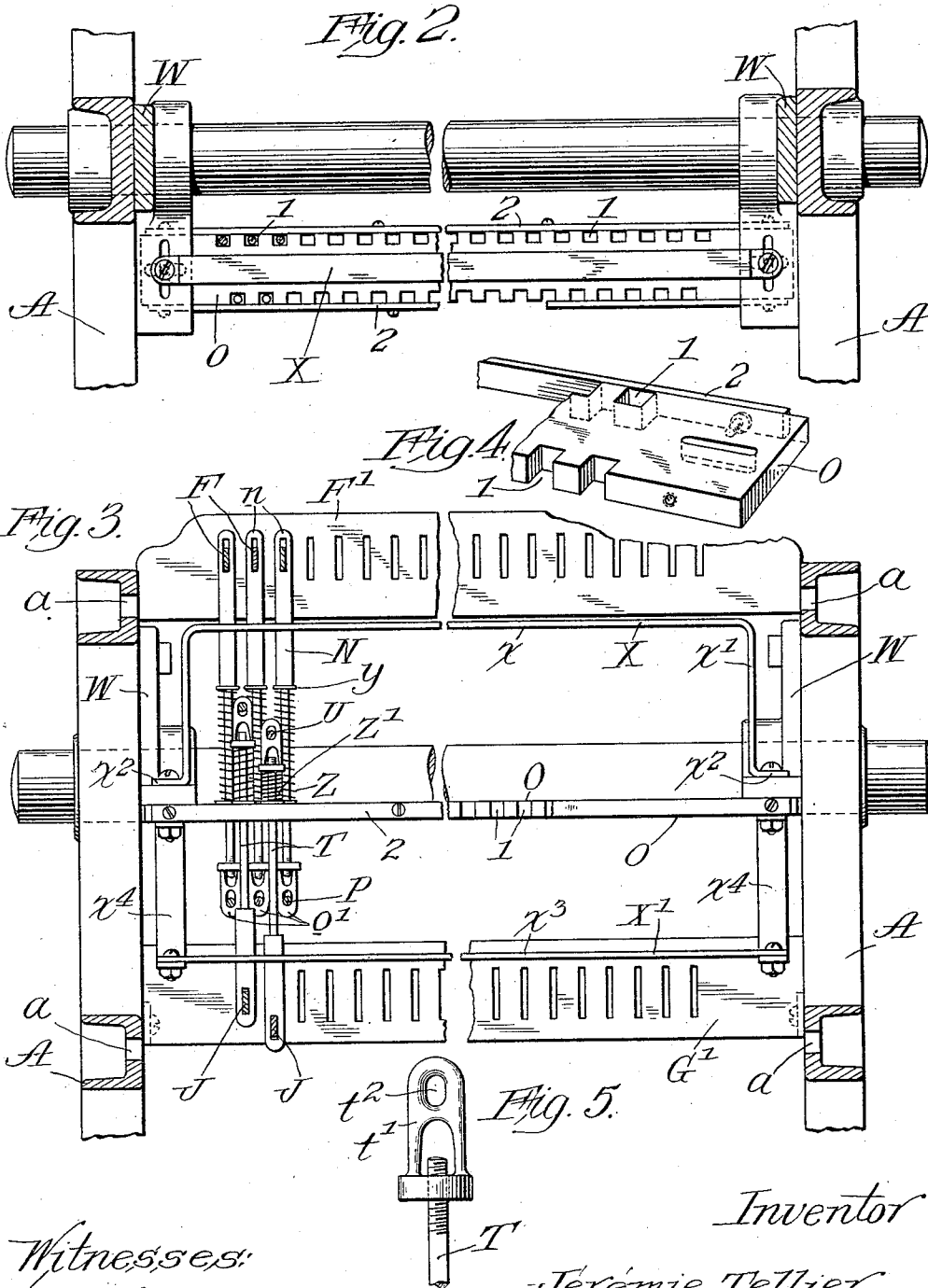
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DOBBY FOR LOOMS.
APPLICATION FILED MAY 15, 1912.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 2.

1,052,768.



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UNITED STATES PATENT OFFICE.

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DOBBY FOR LOOMS.

1,052,768.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed May 15, 1912. Serial No. 697,394.

To all whom it may concern:

Be it known that I, JÉRÉMIE TELLIER, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Dobbies for Looms, of which the following is a specification.

My invention relates to that class of shed-forming mechanism for weaving fancy patterns known as dobbies, in which the harness is connected to oscillating jacks in turn connected by levers or "connectors" to hooks or latches operated by reciprocating "actuator bars" moving in guides of the dobby frame below the latches. The actuation of the proper parts of the harness or heddle frames is governed by selected hooks or latches which are brought into engagement with the actuator bars at the proper times and this selection of the latches is controlled by "indicator levers" arranged over a pattern cylinder or chain carrying radially projecting pegs. The indicator levers are commonly connected with vertically arranged wires or "needles" which control the position of the latches and determine which latches shall engage the actuator bars during each reciprocation thereof. In such dobby mechanism it is common to guide the latches by "grids" and to provide similar grids or guides for the indicator levers which, as is also the case with the latches, are arranged side by side quite close together and require such separating and guiding means. It is customary to form the latches of malleable metal and it is quite common for these latches to become bent or otherwise deformed, causing misweaves and serious injury to the cloth. It is also common for misweaves to occur when the latches, levers or other parts connected therewith become rusty or where the jacks, by reason of extra loads imposed upon them, fail to respond to the actuating mechanism.

It is the object of my invention to so improve the construction of dobbies of this class that these objectionable features are eliminated and the occurrence of misweaves reduced to a minimum.

In carrying out my invention I employ most of the elements ordinarily found in dobbies and thus my invention is made applicable to all dobbies of standard makes,

but instead of employing the usual wires or needles for connecting the indicator levers with the latches or hooks, I provide for each latch an actuating rod having an eye through which the latch is free to slide and by which it is guided, and I connect this rod by novel lever mechanism with a corresponding indicator lever. Each said rod carries a spring which normally lifts the latch or holds it out of the path of the actuator bar, and appropriate guides and stop bars are provided for causing the latch-actuating rods to move in proper paths. The latch-actuating rods are provided with adjusting devices by means of which they may be lengthened or shortened to move the latches to the proper extent and the lever mechanism, which connects the rods with the indicator levers, has also means for adjustment to control the movements of the latch-actuating rods.

The details of construction will be herein-after more fully explained.

By my improvements the latches are positively lifted and depressed, while in other dobbies gravity is depended on to lower the latches after rising and often misweaves occur owing to the failure of the latches to engage the actuator bars by reason of some deformation of the latches or the failure of the indicator levers to descend or otherwise operate properly owing to their being rusty and adhering to their pivots or in the grids.

In the accompanying drawings, Figure 1 shows a vertical section through a dobby embodying my improvements. Fig. 2 shows a transverse section on the line 2—2 of Fig. 1. Fig. 3 shows a vertical section on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of the toothed plate or bar for guiding the latch-actuating rods and holding them in proper operating positions. Fig. 5 is a detail view of one of the devices employed for adjusting the length of the latch-actuating rods.

The dobby frame A, on which the several parts of the dobby mechanism are supported, is of usual construction. The harness jacks B are pivotally supported as usual on a transverse rod C and their pivotal movement is limited by a transverse bar D in the ordinary way. Each harness jack has pivotally supported thereon a connector E and to the upper end of each connector is pivot-

ally attached an upper latch F, while a lower latch G is pivotally attached to the lower end of the connector in the usual way.

The upper and lower actuator bars H and I are, as heretofore, guided in slots a formed in the arms A' of the dobby frame, and these bars are operated by mechanism not shown but which may be of the ordinary kind.

The indicator levers J are pivotally supported on a transverse rod K and normally rest at their outer ends on a stop bar L, being separated and guided at their outer ends by vertical pegs l rising from the stop bar.

The pattern cylinder M shown is of the ordinary kind carrying radially arranged pegs m and this cylinder may be actuated by any appropriate mechanism.

It will be at once apparent to those skilled in this art that the mechanism thus far described is of usual or well known construction and illustrates a type of dobby extensively used. My improvements are applicable to this particular type and also to others having the same general characteristics.

Heretofore it has been customary to connect the indicator levers with the latches by means of vertical wires or needles which serve to move the latches only in one direction and this is open to the objections heretofore explained. I have devised means by which the latches are moved positively in both directions, the latches being so operated and guided that their connection with and separation from the actuator bars is assured at the proper times and under all circumstances, and this actuating mechanism is provided with suitable means for adjustment whereby any irregularities in the form of the latches may be compensated and quickly remedied.

To each upper latch F is connected a latch-actuating rod N having at its upper end an eye n through which the latch extends and having a lower portion n' extending through a guide plate O. The lower end of the rod is threaded and carries a nut o formed with a loop or eye o' through which extends the hooked end of a horizontal lever P pivoted to brackets Q supported on upright bars R bolted to the arms A' of the dobby frame. Each lever P is jointed to a vertical rod S pivotally connected to the outer end of an indicator lever J. In like manner each lower latch G is connected to a rod T having at its lower end an eye t similar to the eye of the rod N and at its upper end carrying a nut t' similar to the nut o and like it having an eye t^2 through which extends the hooked end u of a horizontally arranged lever U pivoted to the brackets Q and connected by an upright rod V to one of the indicator levers J. It will be understood that as usual the upper and lower latches

are connected alternately with the indicator levers.

The guide plate O is supported by brackets W bolted to the sides of the dobby frame and these brackets also support upper and lower guide frames X, X', which prevent the latch-actuating rods from being dragged outwardly by the latches and serve to guide these rods. The upper guide frame X consists of a horizontal portion x and downwardly extending sides x' having feet x^2 which are adjustably connected with the brackets W. In this way the position of the frame may be changed or adjusted to the desired extent and it will be observed by reference to Figs. 2 and 4 that the guide plate O is made adjustable for a similar purpose. In like manner the guide frame X' has a horizontal portion x^3 connected by side pieces x^4 with the guide plate O, and these are also adjustable.

Between the shoulders y on the rods N and the top of the guide plate O, are interposed springs Z which surround the rods and tend to lift the latches F and normally hold them in the elevated position shown, and similarly between the guide plate O and the nuts t' of the rods T, are interposed springs Z' surrounding the rods and tending to lift the lower indicator levers and to normally hold them in an elevated position. The springs Z, Z' yield and are compressed when the indicator levers are operated to lower the latches into the paths of the upper and lower actuator bars. As usual the upper and lower latches extend through and are guided by grids F', G' and these in connection with the eyes of the latch-actuating rods keep the latches separated and guide them.

The guide plate O is preferably of the construction shown in Fig. 2. It is formed with teeth having intervening spaces 1, to receive the rods N and T, such spaces being closed by removable plates or strips 2. One of the brackets Q is shown in Fig. 1. It is to be understood that there are two such brackets, each being adjustably connected with a vertical bar R of which there are also two. Each bracket carries an adjustable arm Q' supporting a horizontal rod Q² to which the levers U are pivoted and each bracket Q also carries an adjustable arm Q³ supporting the horizontal rod Q⁴ to which the levers P are pivoted. In this way the location of the pivots of the levers P and U may be varied and properly located. The brackets Q may also be made vertically adjustable on the upright bars R by adjusting devices r , in the manner indicated in Fig. 1. In order to guide the connecting rods S and V they may be slotted, as shown, and connected with the brackets Q and with the frame by rods g .

In operation, as the pattern cylinder or

chain is revolved and the actuator bars reciprocated, the proper latches, according to the pattern employed, will be positively lowered into engagement with the actuator bars and they will be guided by the eyes of said bars. It will also be understood that as soon as the peg of the cylinder, which causes a connected latch to be lowered by an indicator lever, has passed out of contact with the indicator lever strain is relieved so that the latch may operate through the eye of the actuator bar with but little friction. In this way the chance of an improper actuation of the latches is reduced to a minimum, and the indicator levers being also positively actuated will scarcely ever fail to operate properly, and for these reasons misweaving is reduced to a minimum. It is quite common in looms of this class to delay the operation until the latches are examined to ascertain whether they have defects in construction, or to bend them into proper shape, but by reason of the positive actuation of the latches in both directions, before described, slight defects will not affect the proper operation of the mechanism and by employing means for adjusting the length of the latch-actuating rods, more serious defects can in many instances be quickly remedied.

I claim as my invention:

1. In a loom dobby the combination with an actuator bar, the latches and indicator levers of latch-actuating rods, springs connected therewith and normally holding said rods to support the latches out of the path of the actuator bar, and means connecting said rods with the indicator levers.

2. In a loom dobby, the combination with an actuator bar, the latches and indicator levers of latch-actuating rods having guides through which the rods extend and through which they reciprocate, springs on the rods which normally hold the latches out of the path of the actuator bar, and means connecting the rods with the indicator levers.

3. In a loom dobby, the combination with an actuator bar, the latches and indicator levers of vertically arranged latch-actuating rods connected with the latches, a stop bar in front of said rods for preventing them from being carried forward with the latches, springs normally holding the rods to support the latches out of the path of the actuator bar, and connections between the rods and the indicator levers.

4. In a loom dobby, the combination with an actuator bar, the latches and indicator levers of latch-actuating rods connected with the latches, springs normally holding the latches out of the path of the actuator bar, levers jointed to said rods, and connecting rods joining the levers with the indicator levers.

5. In a loom dobby, the combination with an actuator bar, the latches and indicator levers, of rods having guides through which the latches extend, springs normally holding the latches out of the path of the actuator bar, levers connected with the indicator levers, and adjustable connections between said levers and the latch-actuating rods.

6. In a loom dobby, the combination with an actuator bar, the latches and indicator levers, of latch-actuating rods having guides through which the latches extend, springs normally holding the latches out of the path of the actuator bar, levers connected with the indicator levers, adjustable connections between said levers and the latch-actuating rods, and a bracket having adjustable arms to which said levers are connected.

7. In a loom dobby, the combination with an actuator bar, the latches and indicator levers of a bracket detachably connected with the dobby frame, a guide plate carried by said bracket, latch-actuating rods extending through said guide plate and connected with the latches, springs interposed between said plate and the latch-actuating rods for normally holding the latches out of the path of the actuator bar, and connections between said rods and the indicator levers.

8. In a loom dobby, the combination with an actuator bar, the latches and indicator levers, of a bracket detachably connected with the dobby frame, a guide plate carried by the bracket, guide frames also carried by the bracket, latch-actuating rods supported and guided by the plate and frame, springs interposed between the plate and the rods for normally holding the latches out of the path of the actuator bar, and connections between the rods and the indicator levers.

In testimony whereof, I have hereunto subscribed my name.

JÉRÉMIE TELLIER.

Witnesses:

WILLIAM C. PARKER,
FRANK A. MILLIKEN.