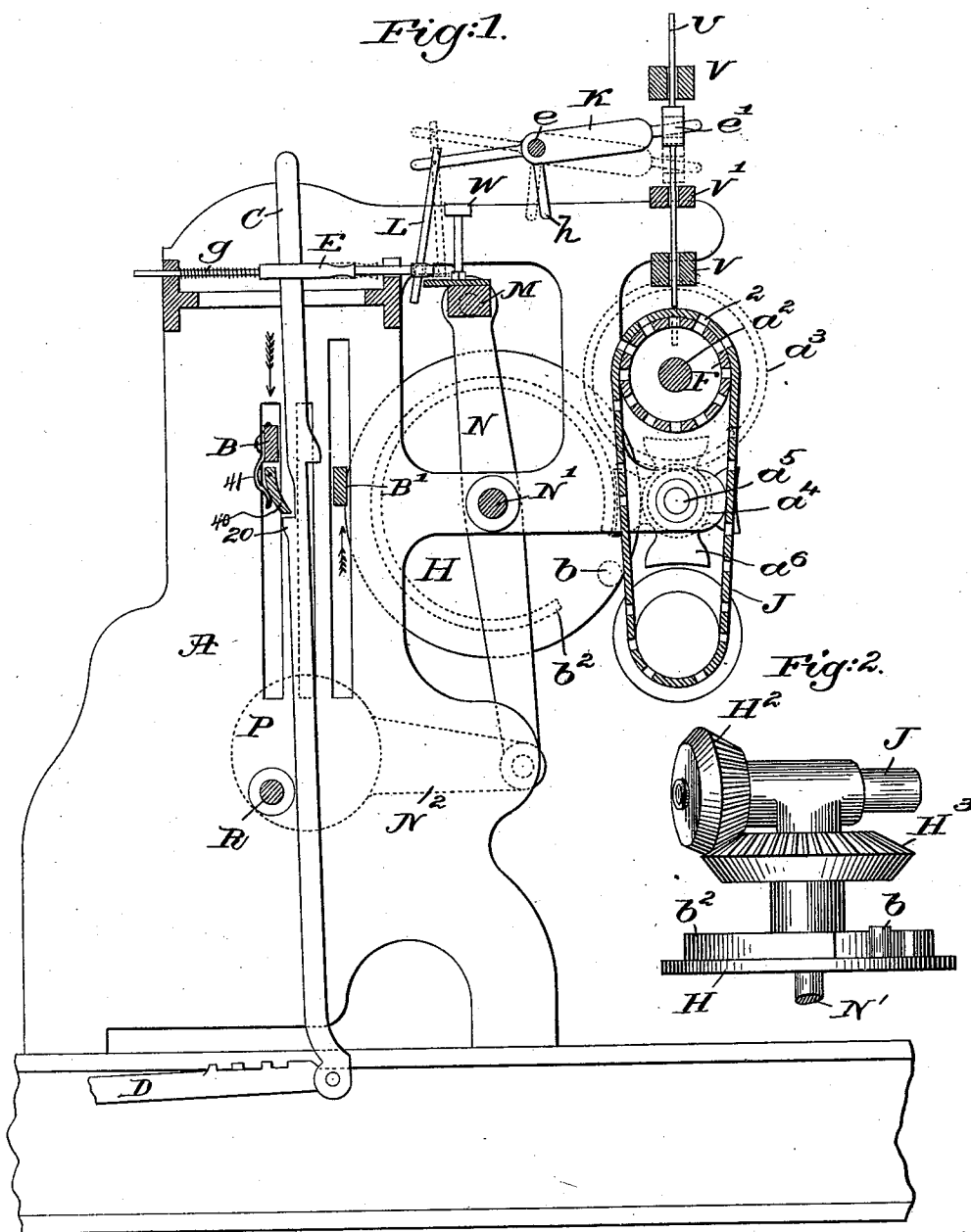


(No Model.)

J. WILD, Dec'd.
W. H. FINGKEL, Ancillary Administrator.
SHEDDING MECHANISM FOR LOOMS.

No. 560,578.

Patented May 19, 1896.



Witnesses.

Edward F. Allen.

Fred. S. Grunhof.

Inventor:

James Wild, deceased
William Henry Finkel
Ancillary Administrator
by Leroy Gregory Atty

UNITED STATES PATENT OFFICE.

WILLIAM H. FINCKEL, OF WASHINGTON, DISTRICT OF COLUMBIA, ANCILLARY
ADMINISTRATOR OF JAMES WILD, DECEASED.

SHEDDING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 560,578, dated May 19, 1896.

Application filed December 6, 1892. Serial No. 454,295. (No model.) Patented in England September 7, 1886, No. 11,341.

To all whom it may concern:

Be it known that I, WILLIAM HENRY FINCKEL, a citizen of the United States, residing at the city of Washington, in the District of Columbia, ancillary administrator of the estate of James Wild, deceased, late a subject of the Queen of Great Britain, and during his lifetime residing at Huddersfield, in the county of York, England, am in possession of an invention, as I am informed and believe, of the said James Wild, relating to an Improvement in Shedding Mechanism for Looms, (the same having been patented in England, No. 11,341, dated September 7, 1886,) of which the following description, taken in connection with the accompanying drawings, is said to be a specification, like letters and figures on the drawings representing like parts.

This invention relates to looms for weaving fancy fabrics, the improvements being more directly aimed at the construction of the pattern apparatus and parts actuated thereby to move the notched or hooked jacks attached to the levers instrumental in opening the sheds in the warp for the passage of the shuttle.

Figure 1 of the drawings shows a sufficient portion of the loom with the improvements applied thereto to enable the invention to be understood, and Fig. 2 is a detail to be referred to.

A represents a part of the framework of a loom, and B B' usual sliding bars for engaging the teeth or notches of the notched jacks C, jointed to harness-levers D, in practice connected in the usual or suitable manner with harness-frames to move them and make sheds in the warp for the reception of the filling. The notched jacks are of such construction that when moved in one direction they will be caught by one of the oppositely-moving bars B B', and when moved in the opposite direction will be engaged by the other of said bars. The moving of the bars B B' may be effected in any usual manner common to looms, one bar being considered as an elevator and the other as a depressor. The bar B is herein shown as provided, as it may be, with a pivoted edge piece 40, which is kept pressed slightly toward the jacks by a suitable spring 41. The

use of the edge piece adds to the certainty of the engagement of the jacks.

The invention lies chiefly, yet not altogether, in means for moving the notched jacks relatively to the bars B B' from a pattern-surface, the same acting upon Jacquard needles, as will be hereinafter described. With each jack a needle or mover E is combined, represented in the drawings as acted upon by a spring g, the latter serving to force the said needle or mover, and with it the jack, back toward the bar B' as soon as the jack-hook has been released from the bar B. Each needle or mover E for shifting the jack to be engaged and moved for the production of the shed has coöperating with it a selecting device, (represented herein as a leg L, pivoted to the lever K, having its fulcrum at e,) one end of the lever part of this selecting device entering an eye at e' of a Jacquard needle U, adapted to slide in suitable guides V V, a stop-bar V' serving to limit the descent or movement of the Jacquard needles toward the pattern-cylinder, the eyes of said needles meeting said bar, as shown by dotted lines.

The Jacquard or pattern cylinder F (see Fig. 1) is represented as substantially cylindrical in cross-section, and it is provided with holes 2, made in rows from end to end thereof, or holes distributed in accordance with the pattern to be woven. This cylinder is fixed to a suitable shaft a², (shown in section in Fig. 1,) the said shaft having suitable bearings in the framework. The shaft a² has a gear a³, (shown by dotted lines,) which is engaged by pinion a⁴, (also shown by dotted lines,) fast on a shaft a⁵, mounted in bearings of the framework, said shaft having also connected to it a star-gear a⁶, which is engaged intermittingly and partially rotated by a pin b on a rotating disk or plate H, having a projecting circular flange or lip b², the said flange or lip when engaging the star-gear preventing rotation of the latter.

The plate H, loose on the rock-shaft N', may be rotated in any usual manner, preferably by means of a bevel-gear, as H², on a shaft J, said bevel-gear engaging a bevel-gear H³, operatively connected to the plate H, as

represented in Fig. 2, which figure is a plan view.

The levers K, forming part of the selecting devices, are herein shown as provided each with an arm *h*.

M is a bar designated as a "jack-actuator," said bar being carried by levers N, having their fulcrum on the rock-shaft N', the lower end of one of said levers having jointed to it a suitable strap-link N², surrounding an eccentric P, fast on a rotary shaft R, adapted to be rotated in any usual or suitable manner. Mounted on and movable with the bar M is a bar W, the latter bar and the arms *h* of the levers K constituting what may be denominated "retractors" for the Jacquard needles U.

The drawings show the bar M, constituting the jack-actuator, in its operative position—that is, as acting upon certain of the legs of the selecting device, the legs so acted upon having moved the needle or mover E to place the notched parts 20 of the hooked jacks in the path of movement of the sliding bar B.

The bars B B' having been moved after the distribution of the jacks to make the shed indicated by the pattern-cylinder, the jack-actuator M will be moved away from the jacks, and in so doing the bar W of the retractor will strike the arms *h* of the selecting devices and will move all of them into the full-line position shown in the drawings, and at such time the pattern-surface F will be rotated to bring under the lifted Jacquard needles the next row of holes with which said needles U are to coöperate to define the next shed.

The Jacquard holes in the endless belt-like surface J having been brought into position the jack-actuating device M will be started toward the jacks, and in so doing the bar W will retire from the arms *h* and the Jacquard needles U will by their gravity drop, and all the Jacquard needles, the lower ends of which can enter holes in the pattern, come into the dotted-line position shown in the drawings, while those needles which are not opposite

holes in the pattern will be held up, as shown in the full-line position, and in such position the leg part of the selecting device will stand in the path of movement of the jack-actuator and will be struck by it. Each leg L in this embodiment of the invention is extended into or through a notch or hole in the end of the needle or mover E, which contacts directly with a jack C.

In the drawings the lower end of the Jacquard needle U (shown by full lines) is terminated a little above the substantially circular face of the pattern-surface.

Having described the invention, what is claimed, and desired to secure by Letters Patent, is—

In a loom the following instrumentalities, viz: harness-levers; connected notched jacks; an elevator and a depressor to move said jacks in one or the other direction; a series of needles or movers coöperating with said jacks; a pattern-surface; means to rotate said pattern-surface; a series of Jacquard needles, the position of which preparatory to the formation of a shed is determined by said pattern-surface; a jack actuator or bar; a series of selecting devices controlled as to their positions by said Jacquard needles and pattern-surface, and adapted to be moved independently of each other by the said jack actuator or bar to thus insure the movement of certain of said needles or movers, which in turn actuate the notched jacks to put them into position to be engaged by the elevator or by the depressor at the desired times, and with extractor mechanism to effect the lifting of all the Jacquard needles away from the pattern-surface preparatory to rotating the latter one step, as and for the purposes set forth.

In testimony whereof I have hereunto signed my name this 6th day of December, A. D. 1892.

WM. H. FINCKEL,

Ancillary administrator of the estate of James Wild, deceased.

Witnesses:

J. MAWDSLEY,

HARRY Y. DAVIS.