

J. ZÜRCHER.
Looms.

No. 141,907.

Patented August 19, 1873.

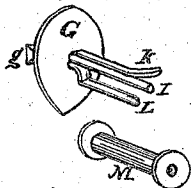
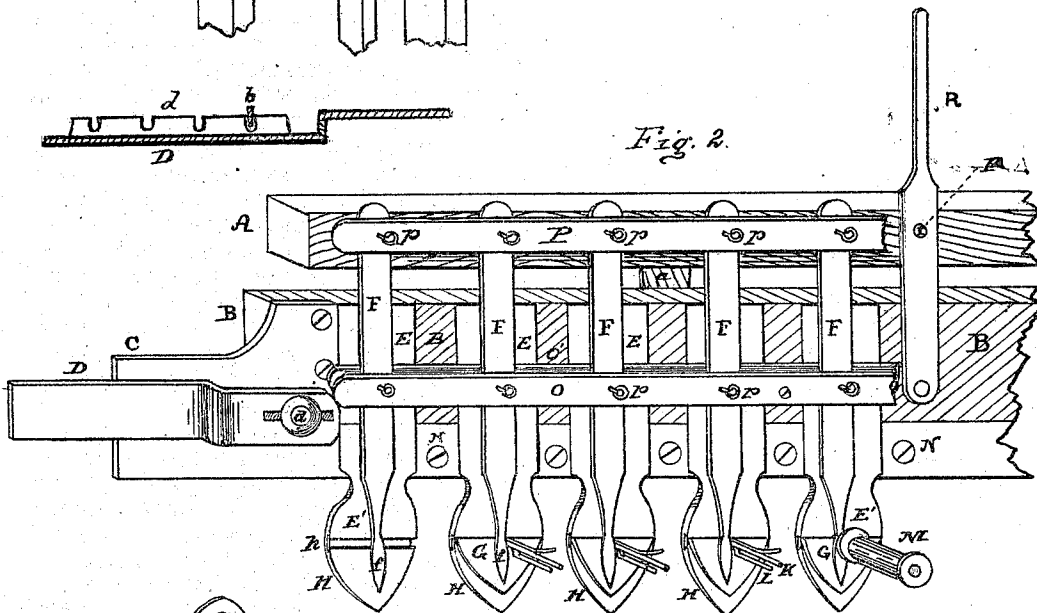
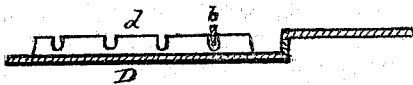
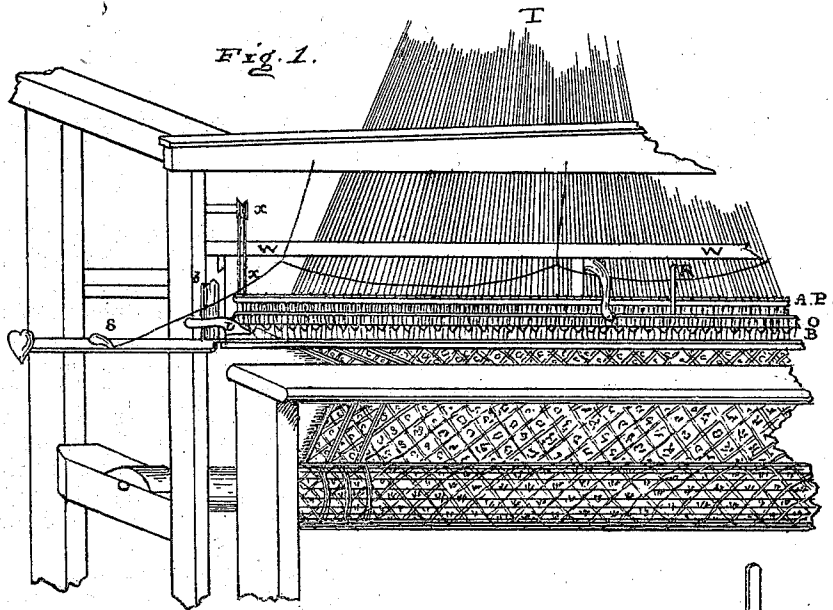


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN ZÜRCHER, OF LANCASTER, PENNSYLVANIA.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. **141,907**, dated August 19, 1873; application filed June 18, 1873.

To all whom it may concern:

Be it known that I, JOHN ZÜRCHER, of the city and county of Lancaster, in the State of Pennsylvania, have invented certain Improvements in Looms for Weaving, of which the following is a specification:

This invention relates to the arrangement and construction of separate shuttles, and manner of operating them, on a stitching-frame, singly, in pairs or groups, more or less remote, for the purpose of weaving or stitching into or upon a figured fabric distinct ornaments or flowers simultaneously with the mechanism which weaves the cloth. A Jacquard is used to determine the figures on the fabric in the ordinary way, as well as to determine the flowers and ornaments stitched in by the shuttle.

The drawings illustrate my improved shuttle and manner of application to, and operation on, the stitching-frame.

Figure 1 is a part of an ordinary loom for weaving coverlids, to be supplied with an ordinary Jacquard, and stitching-frame as shown in place. Fig. 2 is an enlarged view of a portion of a stitching-bar, with the parts used for operating and holding the shuttles. Fig. 3 shows the shuttle and spool detached.

The frame W is suspended from pulleys by a weighted cord, and is moved up and down in the usual manner. My invention consists in the application to the shuttle-guides of springs to hold the shuttles in their grooves, when combined with other devices, as hereinafter described, for actuating such shuttles. The stitching-bar B is attached to the lower rail of the frame W, which extends across the loom, say, ninety-four inches, or the full width of a counterpane. At regular intervals there are inserted shuttle-guides H, of an ovoid form, acuminated to a point below, and provided with a horizontal groove, *h*. These are inserted flush with the wood of the bar B, and project below the said bar, or are cast with a connecting-strip, N, and secured with screws to the bar B, as shown. The ends of the flat springs E cover the guides H about half-way, their ends being cut off directly over the grooves, so as to embrace or clamp the upper portion of the shuttles and allow the spool-shaft I to pass freely but closely under their

edges. F shows the vibrating fingers, with their points *f*, which propel the shuttles. These fingers are centrally held between the strips or bars *o' o*, on fulcrum-pins *p*, and act as levers, the upper ends being secured under a strip or bar, P, by pivot-pins *p*, to the shifting bar or rail A. This rail is connected with a hand-lever, R, affixed by a pivot to the stitching-bar B on the right hand of the center of the loom, and on motion being imparted to the lever R the fingers F *f* will be moved to the right or to the left, and when duly adjusted they will propel the shuttles G from one grooved guide, H, to the adjoining one on its right or left, back and forth at pleasure. The frame is also worked up and down, to make and secure the stitch, in combination with the ordinary shuttle, woof, and reeds used in weaving counterpanes, and the like, on the loom and Jacquard mechanism in common use. The shuttles G used are egg-shaped, and have a flange or tongue, *g*, centrally across the rear, which fits into the groove *h* in the guides H, and the portion above the spool-shaft I and spring K is clamped by the flat spring E'. The spool M contains the yarn for the shuttle, while an open-looped guide-wire, L, holds the yarn. The end C D simply shows the arm made for adjusting—that is, by means of a notched flange, *d*, for a vertical guide-bar, *b*, on the loom, in which the stitching-bar is guided as it is raised and lowered with the frame. Thus the points of the shuttle-guides can be adjusted for the location of the ornaments to be stitched upon the fabric, while the throw of the fingers is adjusted by a plate, *a*, on the back, and adjustable stops, so as to limit the action of the fingers on the shuttles to the exact distance.

This arrangement of a continuous series of guides, springs, and fingers, operated by a single lever, allows of bringing the separate shuttles in close proximity, singly, in pairs or groups, across the entire width. The spools of colored weft-thread or yarn are readily changed on the shuttles. The stitching is performed, not by forming a loop to be cut, but firmly woven or stitched into the texture of the cloth simultaneously with the weaving of the same; and, in point of fact, is analogous to hand-stitching in its combination with

the web and warp of the ordinary Jacquard product and mechanism employed heretofore, differing substantially from Marseilles ornamentation, carpet-weaving, or tambour-frames and appliances used in such manufacture; therefore

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

The arrangement of the grooved shuttle-guides H, springs E E', fingers F f, held under

or between strips *o o'* P, with pivot-pins *p* on the stitching-bar B, in combination with the shifting rail A and lever R, substantially in the manner shown, and for the purpose described.

JOHN ZÜRCHER.

Witnesses:

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JACOB STAUFFER.