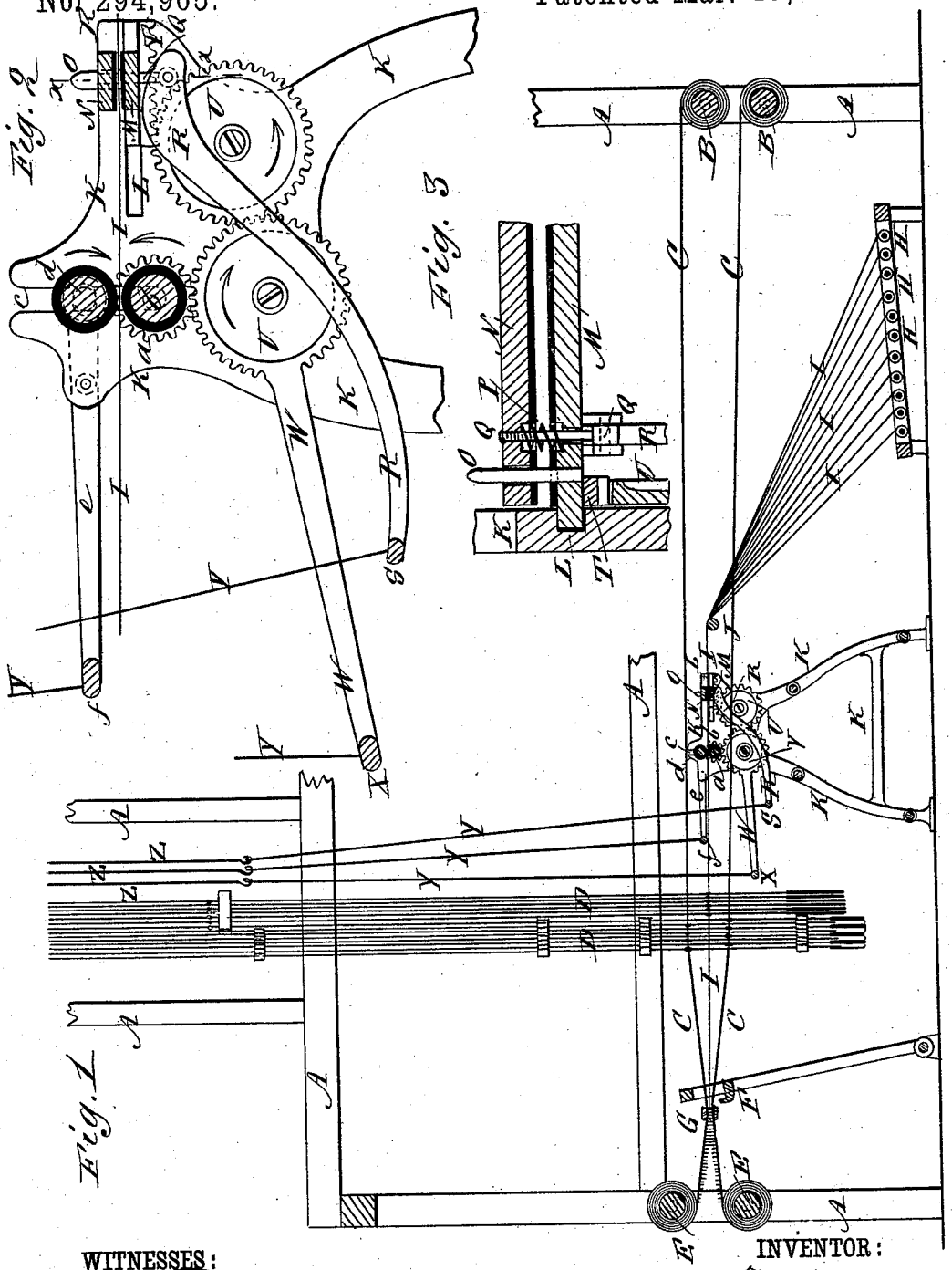
(No Model.)

F. CHARCOT.

MECHANISM FOR DELIVERING PILE WARPS IN LOOMS FOR WEAVING DOUBLE PILE FABRICS.

No. 294,965. Patented Mar. 11, 1884.



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UNITED STATES PATENT OFFICE.

FRANK CHARCOT, OF PATERSON, NEW JERSEY.

MECHANISM FOR DELIVERING PILE-WARPS IN LOOMS FOR WEAVING DOUBLE PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 294,965, dated March 11, 1884.

Application filed August 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANK CHARCOT, of Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Mechanism for Delivering Pile-Warps in Looms for Weaving Double Pile Fabrics, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of my improvement, the same being shown as applied to a part of a loom. Fig. 2 is a sectional side elevation of my improvement enlarged. Fig. 3 is a sectional rear elevation of a part of the same, taken through the line *x x*, Fig. 2.

My invention relates to looms for weaving double pile fabrics; and it consists of improvements in delivering mechanism for the pile-warps, the same being constructed with clamping-bars and clamping-rollers, between which the pile-warps are passed, said bars and rollers being mounted upon a frame and provided with means, operated from the hooks of a Jacquard mechanism, whereby the said bars and rollers are caused to clamp and carry forward the pile-threads, as hereinafter fully described.

A represents the frame of the loom; B, the beams that carry the two warps C for forming the ground or body portions of the double-pile fabric.

D is the harness.

E are the two rolls that receive the two webs after the double pile fabric is cut apart.

F is the lathe; and G are the gages that determine the distance apart of the two ground webs while being woven, and length of pile between the webs.

H are the weighted spools, that carry the pile-forming threads I, which latter pass between the threads of the lower ground-warp, C, and over a guide-roll, J, placed between the two sets of ground-warps C, and secured to the frame A or other suitable support.

K is a frame, the upright end parts of which are placed at a little distance outside of the edges of the lower warp, C, with their tops rising above the said lower warp, as shown in Fig. 1.

In the inner sides of the rear upper corners of the frame K are formed horizontal grooves L, in which work the ends of a cross-bar, M, or cross-heads formed upon or attached to the said ends. Upon the cross-bar M is placed a second cross-bar, N, which is made a little shorter than the cross-bar N, so that it can move freely between the upright ends of the frame K. The cross-bar N is kept in place upon the cross-bar M by guide-pins O, attached to the said bar M, and passing through guide-holes in the said bar N. The cross-bar N is held up from the cross-bar M by spiral or other shaped springs P, interposed between them, and the ends of which are placed in recesses in the adjacent faces of the said cross-bars, so that the said faces can be drawn close together, the springs P, when compressed, being received in the said recesses. The springs P can be further secured in place by being placed upon the shanks of the screw-bolts Q, which pass through holes in the bar M, and are screwed into or otherwise secured to the bar N.

To the eyes of the bolts Q are hinged the ends of levers R, which are curved downward and forward, and are rigidly connected at their forward ends of a cross-bar, S, so that the said levers will work together. Upon the upper sides of the hinged ends of the levers R are formed curved projections, which rest against the lower side of the cross-bar M, and serve as fulcrums to the levers, so that by raising the forward ends of the said levers the bar N will be drawn down snugly upon the bar M to clamp the pile-threads I passing between the said bars M N.

To the lower sides of the ends of the cross-bar M are attached short rack-bars T, which are placed at right angles with the length of the said bar M, and the teeth of which mesh into the teeth of the gear-wheels U, pivoted to the inner sides of the ends of the frame K. The teeth of the gear-wheels U mesh into the teeth of the gear-wheels V, also pivoted to the inner sides of the ends of the frame K, and to which are rigidly attached or upon which are formed levers W. The levers W project forward and downward, and are rigidly connected at their forward ends by a cross-bar, X, so that they will move together. With this con-

struction, by operating the levers R, the pile-threads I will be clamped between the bars M N, and by operating the levers W the clamping-bars M N will be moved forward to give the pile-threads the slackness necessary in forming the pile. The cross-bars S X of the levers R W are connected by rods or wires Y with the hooks Z of the Jacquard mechanism, so that the pile-threads I will be clamped and drawn forward automatically at the proper times. The pile-threads I necessary to form the pattern will be raised and lowered at the proper times to be interwoven with the upper and lower warp-threads which form the two ground or body webs by the harness, in the usual manner. The teeth of the gear-wheels V also mesh into the teeth of the gear-wheels *a*, attached to the ends of the roller *b*, the journals of which revolve in vertical slotted bearings *c*, formed in the ends of the frame K, and in which are also received the journals of the roller *d*, placed directly above the roller *b*. The journals of the upper roller, *d*, revolve in bearings in the ends of the levers *e*, which are pivoted to the ends of the frame K at a little distance from the slots *c*, so that the roller *d* can be lowered and raised by operating the said levers. The levers *e* project forward, and are rigidly connected at their forward ends by a cross-bar, *f*, so that they will move together. The bar *f* is connected by a rod or wire, Y, with a hook, *Z*, of the Jacquard mechanism, so that the levers *e* will be operated automatically at the proper times to clamp the pile-threads I between the rollers *b d*, after which the movement that is imparted to such rollers *b d* through the pinion *a* from the gear *v* will carry the said pile-threads forward and give them the necessary slackness.

The clamping-bars M N or the clamping-rollers *b d* can be used separately, or the bars and the rollers can both be used at the same time. The latter arrangement is preferable, as, being more certain in its operation, the bars and rollers being so geared as to carry the pile-threads forward through the same place.

The bars M N and the rollers *b d* can be faced with rubber or other suitable soft material, to prevent them from slipping upon the pile-threads.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the clamping-bars M N, the clamping-rollers *b d*, and the supporting-frame, of Jacquard mechanism and means connecting the latter with said bars and rollers, whereby the latter are caused to clamp and feed forward the pile-warp, as set forth.

2. The combination, with the Jacquard hooks *Z*, the cross-bars M N, and the springs P, of the eyebolts Q, levers R, rack-bars T, gear-wheels U V, levers W, and means for connecting the levers R W with the Jacquard hooks, substantially as herein shown and described.

3. The combination, with the Jacquard hooks and rollers *b d*, of the gear-wheels *a* V, the levers W *e*, and means for connecting said levers with the Jacquard hooks, substantially as herein shown and described.

FRANK CHARCOT.

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