T. HALTON.

JACQUARD LOOMS.

No. 185,027. Patented Dec. 5, 1876.

Fig. 1.

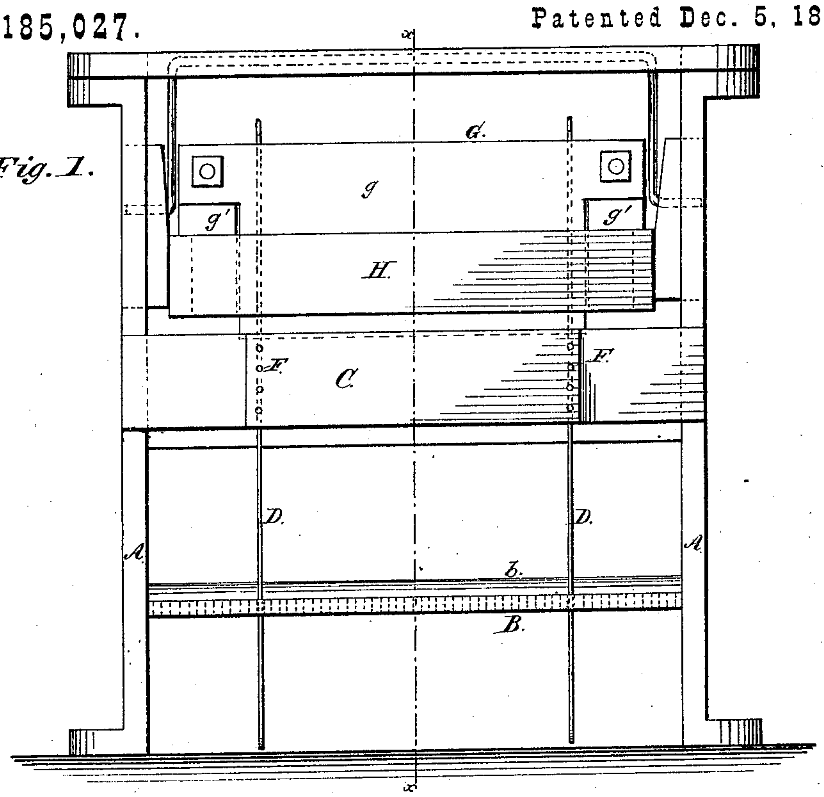


Fig. 3.

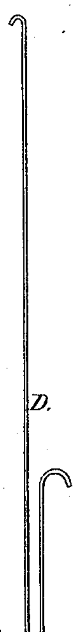
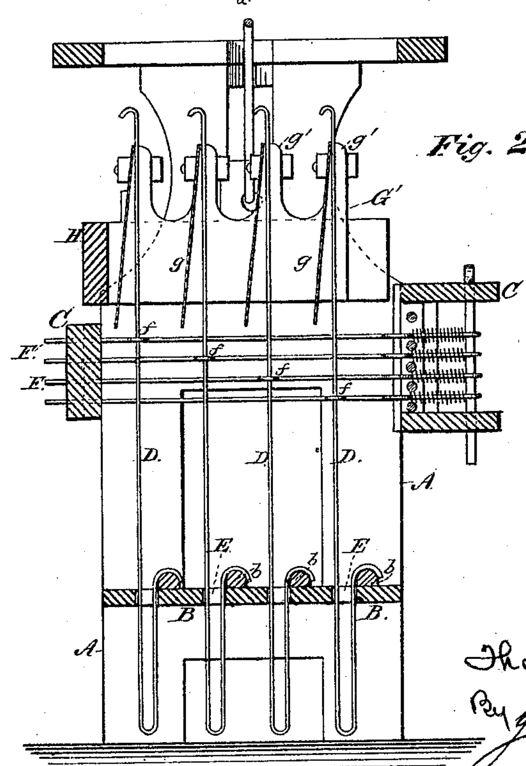


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS HALTON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN JACQUARD LOOMS.

Specification forming part of Letters Patent No. **185,027**, dated December 5, 1876; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, THOMAS HALTON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Jacquard Looms, of which the following is a specification:

This invention relates to certain improvements in Jacquard looms, its object being to prevent the blades of the griff, on their return motion, after elevating the hooks by which the harness is elevated, from striking against or falling upon the wrong side of the series of hooks previously thrown out of the way of the blades by the needles operated by the Jacquard cylinder, and thus prevent injury to the said hooks by breaking or bending the same; and, further, to provide for readily removing and renewing a hook when worn or injured, without removing the other hooks.

The invention consists in the combination, with hooks for operating the harness of a loom, of a griff provided with a series of inclined blades, secured to the arms or brackets of a vertically-reciprocating frame, and constructed and arranged as hereinafter described, whereby their lower edges, when the griff is elevated, will fall below the upper ends of the hooks previously thrown out of operation by the needles, as more fully hereinafter set forth.

In the drawing, Figure 1 represents a front view of my improved apparatus; Fig. 2, a transverse vertical section, and Fig. 3 a detached view of one of the hooks.

The letter A represents the upper part of the frame of a Jacquard loom, B the hook-board, and C the needle-board, constructed in the ordinary or any preferred manner. D represents the hooks for operating the harness, the lower ends of which pass through and are capable of a vertical reciprocating motion in the slots E of the hook-board. The said hooks extend vertically upward, their bent ends terminating directly over the upper edges of the blades of the griff, so that said hooks will be elevated thereby when not thrown back by the needles F, which are operated by the ordinary Jacquard cylinder.

The letter G represents the griff, which is composed of a series of blades, *g*, secured at each end in a slightly-inclined position to the brackets *g'*, arranged at opposite ends on the vertically-reciprocating frame H. The said blades are of such width that when the griff is fully elevated its lower edge will not clear or pass above the upper ends of the hooks D previously thrown out of operation by the needles F, so that, if said hooks should accidently slip or be shifted after the griff is elevated, the upper ends will fall against the sides of the blades, and not under their lower edges, in order to prevent the blades from throwing the hooks to the wrong side or injuring or breaking the same on the return movement of the griff.

The hooks D are constructed of metallic wires or bars, bent upward at their lower portions, which set through the slots in the hook-board, the extremities of such bent portions being bent outwardly, as shown, so as to form stops, which rest upon the bars *b* of the hook-board, and limit its downward movement. Each needle is bent, as shown at *f*, opposite its respective hook, forming an open recess in which the hook sits, and by which it is moved with the needle, the hook being kept in said recess by the other needles of the series, and by the slots in the hook-board below when in proper position.

When it is desired to remove a hook it is elevated until its lower end is clear of the slot in the hook-board, after which it can be readily removed from the open recess formed by the bend in the needle.

As thus constructed, it will be seen that as the lower edges of the blades never pass above the upper ends of the hooks, all liability of the hooks, which have been thrown out of operation by the needles, to slip forward and fall on the wrong side of or under the blades, is obviated, and any injury to said hooks by bending or breaking is rendered impossible. It will also be seen that the hooks can be readily removed and replaced by simply lifting their lower ends from the slots in the hook-board, and then withdrawing the hook from the open recess in the needle.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with the hooks D, for operating the harness of a loom, of a griff, G,

provided with a series of inclined blades, *g*, secured to the arms or brackets *g'* of the vertically-reciprocating frame H, and constructed and arranged as described, whereby their lower edges, when the griff is elevated, will fall below the upper ends of the hooks previously thrown out of operation by the needles, substantially as and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

THOMAS HALTON.

Witnesses:
ROBERT T. RITCHIE,
DAVID MCCARTHY.