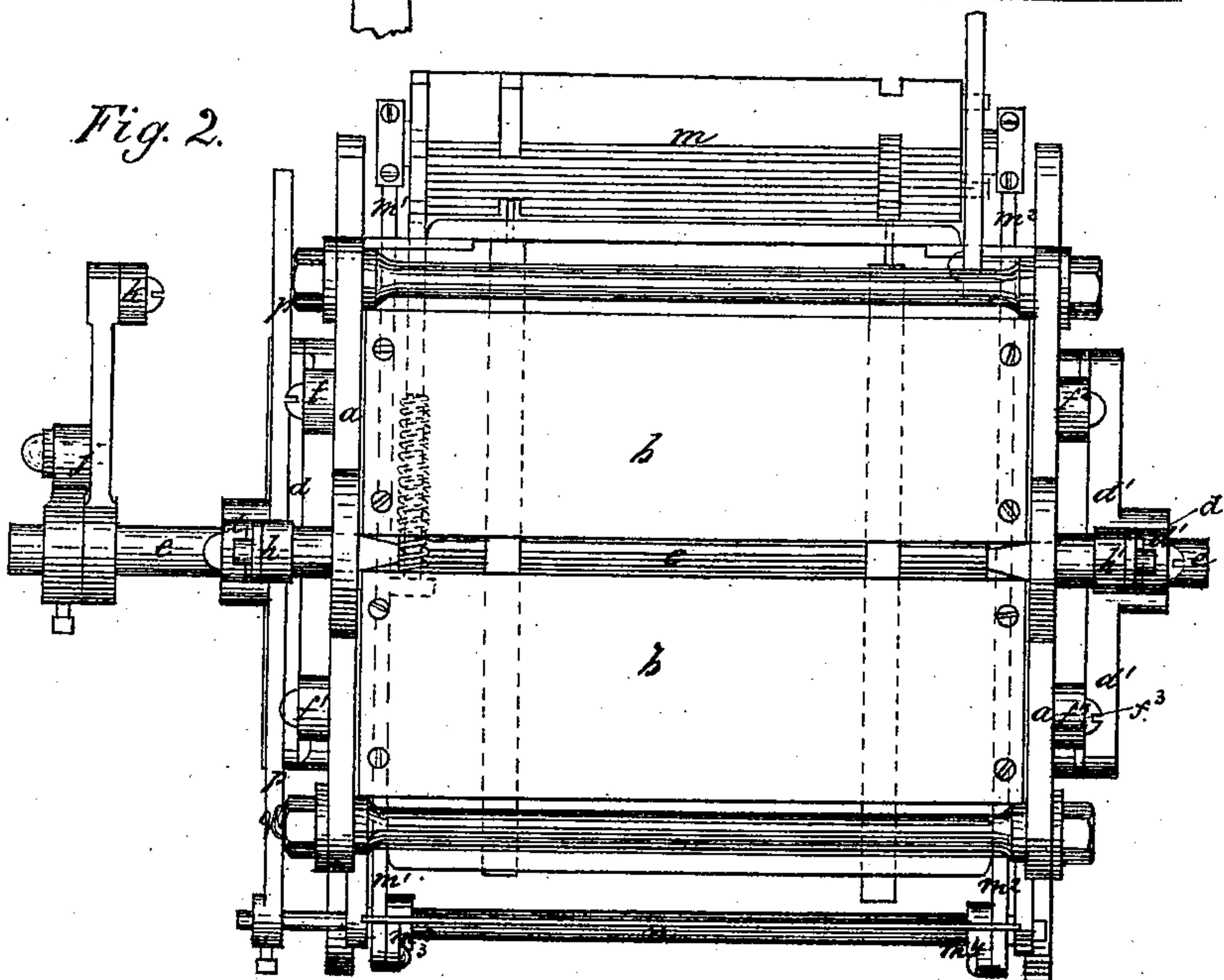
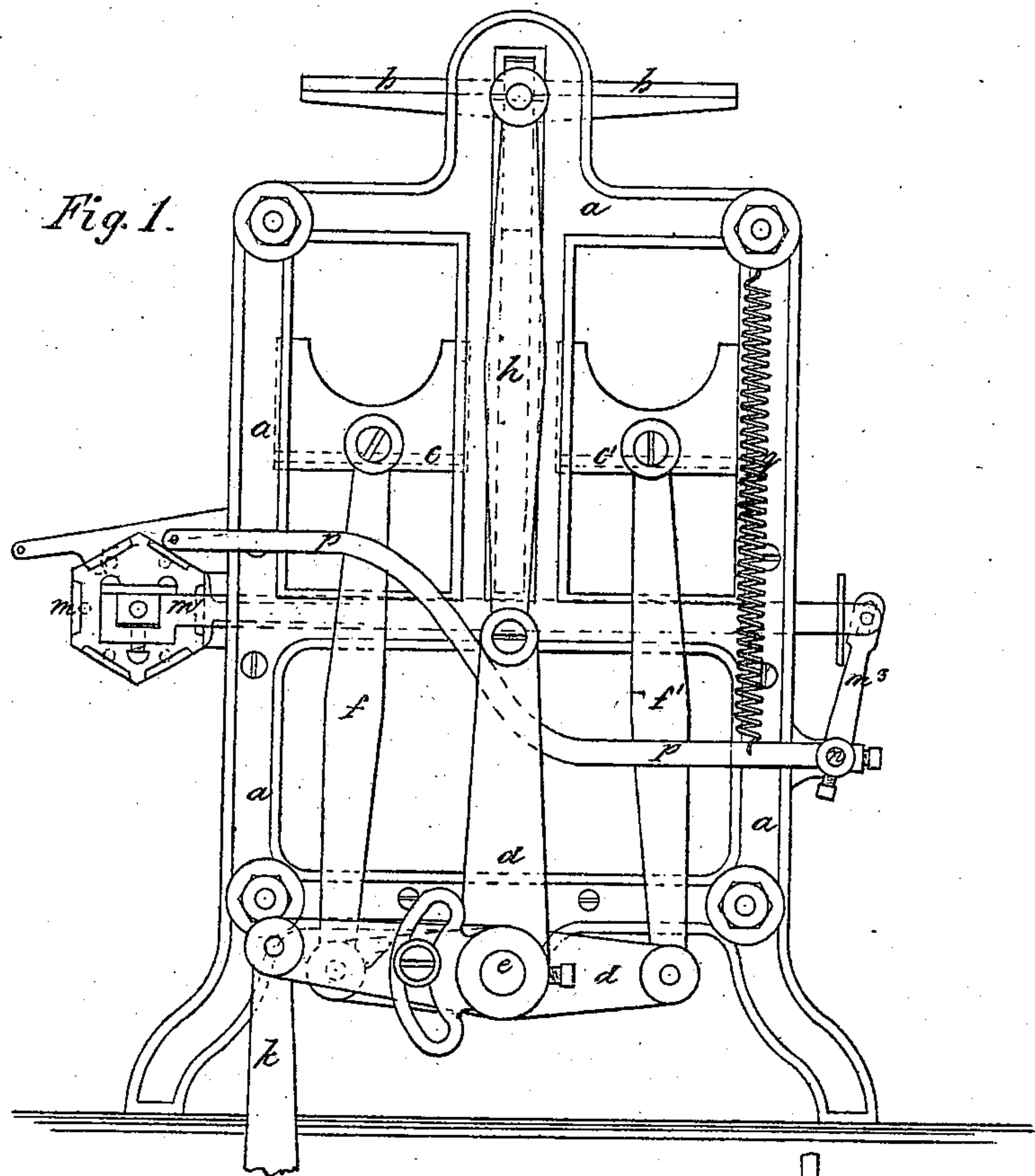


E. K. Davis,
Jacquard Loom.

No. 96,553.

Patented Nov. 9. 1869.



Witnesses
J. C. Head
Joseph Campbell

Inventor,
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United States Patent Office.

EZEKIEL K. DAVIS, OF NEW YORK, N. Y., ASSIGNOR TO DUCKWORTH & SONS, OF PITTSFIELD, MASSACHUSETTS.

Letters Patent No. 96,553, dated November 9, 1869.

IMPROVEMENT IN JACQUARD-MECHANISM FOR LOOMS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, EZEKIEL K. DAVIS, of the city and county of New York, and State of New York, have invented certain new and useful Improvements in the Jacquard-Mechanism of Looms; and I do hereby declare that the following is a full and correct description thereof, reference being had to the accompanying drawings, and to the letters of reference thereon.

My invention relates to mechanism for operating the trap-boards, in connection with an ascending and descending suspension-board; and consists in the arrangement and combination, with the suspension-board and trap-boards, of two T-levers, one on each side of the jacquard, in manner and for the purposes hereinafter more fully described; also, in operating the card-prism, by means of a combination of the arm of the T-lever, which operates the suspension-board, and a cam, or bent arm, attached to the rock-shaft, which reciprocates the card-prism.

Figure 1, of the drawings, represents a side elevation of a jacquard, with my improvements applied thereto.

Figure 2, a plan view of the same.

Letter *a* represents the frame of the jacquard.

b, the suspension-board.

c c', the two trap-boards.

In this form of jacquard, the shed is opened from the middle, by simultaneously raising and lowering the warps, the suspension-board moving downward to lower the warps not trapped by the ascending trap-board; and it is necessary that the suspension-board should not begin to move downward until the ascending trap-board has trapped, and begun to lift the warp-threads selected for it by the pattern-card, when the suspension-board must move down quickly, to make up for the time thus lost by waiting for the ascending trap-board to secure its warp-threads.

This combination of motions is produced in a very simple manner by the first part of my said invention, as follows:

Letters *d d'* are two T-levers, one at each side of the jacquard, and both attached to a horizontal rock-shaft, *e*, which rocks in suitable bearings on the under side of the frame.

The T-levers have each two short arms, in line with each other, connected respectively to the two trap-boards, by links *f f' f' f'*, in such manner that when the arms are horizontal, the two trap-boards are in the same horizontal plane.

The central arms of the T-levers are about twice the length of the two short arms, and are connected to the suspension-board by links *h h'*, in such manner that when the two trap-boards are in the same hori-

zontal plane, the links and arms of the T-levers connected with the suspension-boards are vertically in line with the rock-shaft and point of connection with the suspension-board.

It follows, from this construction, as will be obvious from an inspection of the drawings, that when the ascending trap-board begins to rise to trap and secure its cords, the suspension-board has no appreciable motion, because its levers and links are in line, and are just moving off the centre, while the levers and links operating the trap-boards are at right angles, and are moving at their quickest speed. The speed of the trap-boards gradually diminishes, while that of the suspension-board increases, until the motion is arrested and reversed, and the greater length of the arms of the T-levers, which operate the suspension-board, causes it to be moved the required distance in time.

The rock-shaft and T-levers may receive motion from the loom by means of the adjustable arm *j*, attached to the rock-shaft, and a connecting-rod, *k*, shown broken off, but to be connected with the loom, as usual in jacquard looms.

The card-prism *m* turns in bearings at the end of horizontal sliding bars *m' m''*, which are connected to the two arms *m' m''* of a horizontal rock-shaft, *n*.

This rock-shaft *n*, which imparts reciprocating movement to the card-prism, is actuated by the upright arm of one of the T-levers, through a bent arm, *p*, attached to the rock-shaft *n*, which extends across the side frame, and bends up like a cam, to be actuated by the rounded surface of the lower end of the link, which connects the upright arm of the T-lever with the suspension-board, as shown in the drawings; or it may be operated by a pin, placed in the upright arm of the T-lever, just below the link-connection.

A spring, *g*, reacts the bent lever, and keeps it in contact with the actuating-surface of the T-lever.

I claim, as of my invention and improvement in jacquard-mechanism—

The T-levers, in combination with the suspension-board and trap-boards, when arranged and constructed so as to produce the mode of operation hereinbefore described.

Also, in combination with the card-prism and its reciprocating-mechanism, the bent arm *p* and the T-lever, arranged and constructed to operate in the manner described.

EZEKIEL K. DAVIS.

Witnesses:

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