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F. KESSELRING.

DOBBY.

(Application filed Dec. 13, 1899.)

(No Model.)

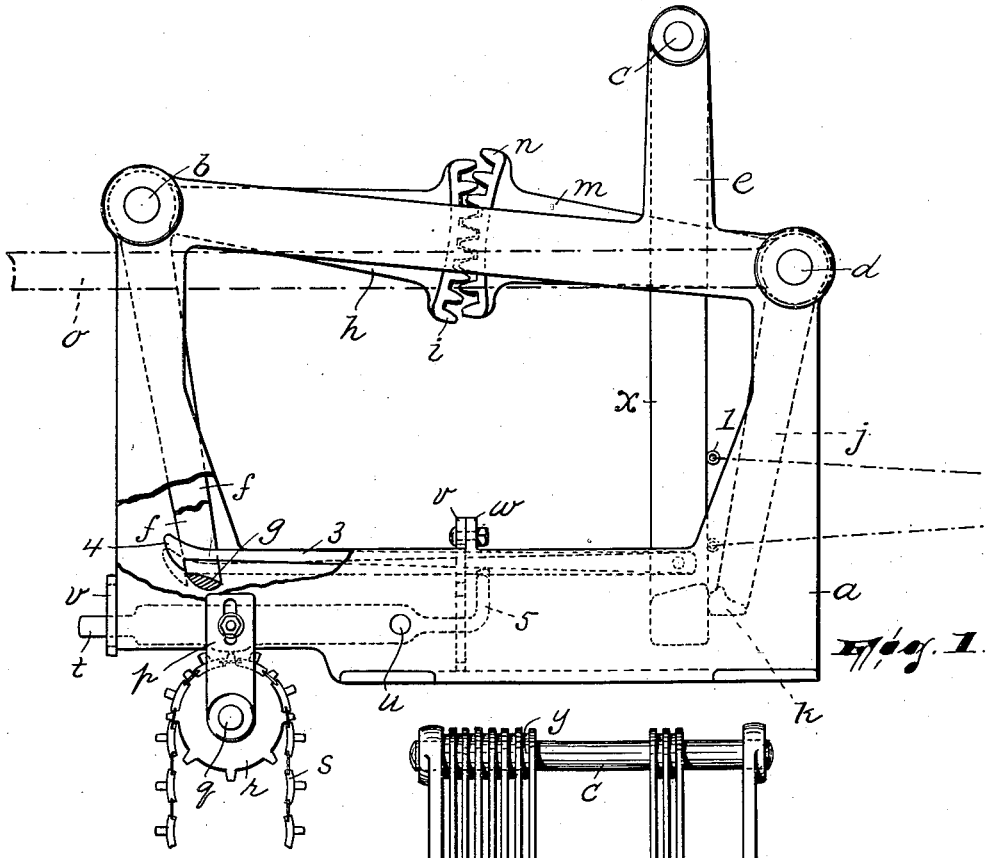

Fig. 1.

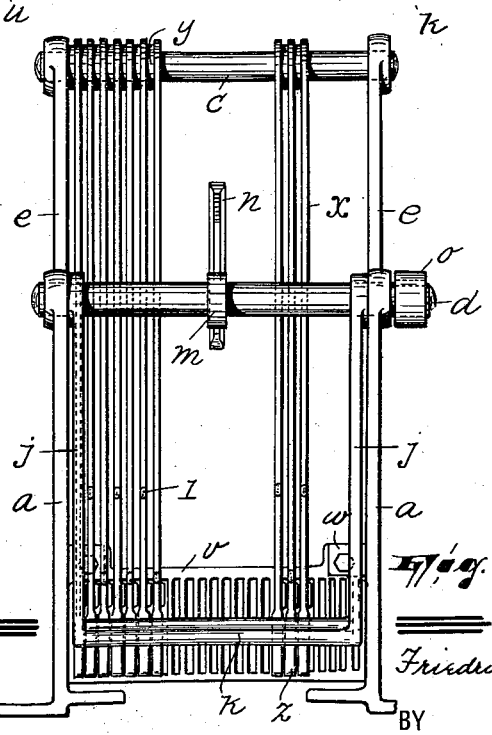

Fig. 2.

WITNESSES:

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SPECIFICATION forming part of Letters Patent No. 648,691, dated May 1, 1900.

Application filed December 13, 1899. Serial No. 740,173. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH KESSELRING, a citizen of the United States, residing in Sterling, county of Morris, and State of New Jersey, have invented certain new and useful Improvements in Dobbies; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to shedding mechanisms for looms; and its object is to provide a mechanism of this nature comprising a certain improved construction and directly interconnected arrangement of levers for controlling the harness whereby actuation of said levers involves their movement in relatively-opposite directions, and thus while the one is adapted to positively act on a portion of the harness the other tends to give way to the remainder of said harness.

With slight alterations in the details of construction of my improved shedding mechanism its motion may be practically employed either where the pattern-chain and jacks are made use of in connection with the levers to operate the harness or in substitution for what is known as the "cam-motion" or other plain shedding mechanism.

The invention consists in the improved shedding mechanism and in the combination and arrangement of its various parts, substantially as will be hereinafter pointed out and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, Figure 1 is a view in side elevation of my improved shedding mechanism, a portion thereof being broken away; and Fig. 2 is a rear end view of said shedding mechanism.

a a designate two plates or uprights of approximately-rectangular form, which together constitute the frame of my shedding mechanism and which are adapted to be supported upon the loom-frame as usual. These plates or uprights are connected by shafts *b*, *c*, and *d*, the shafts *b* and *d* being rock-shafts and disposed at the upper corners of said uprights and the shaft *c* being set in vertical arms or standards *e*, which form integral portions of said plates or uprights.

f f are two spaced levers which are suspended from the shaft *d*, to which they are rigidly secured at their upper ends and which forms a fulcrum for them. Said levers are connected at their lower ends by a bar *g*, that is beveled to produce what is technically known as the "knife." Upon the shaft *b* is also rigidly secured another lever *h*, said lever projecting substantially at right angles to the levers *f* and being disposed on the shaft preferably midway between said levers *f*. The free end of this lever *h* is enlarged vertically and provided with teeth *i*, thus constituting a toothed segment. *j j* are other levers which are mounted upon the shaft *d*, being rigidly secured together at their upper ends and connected at their lower ends by a bar *k*. Upon the shaft *d* and extending therefrom substantially at right angles to the lever *j* is rigidly secured another lever *m*, this lever having its free end vertically enlarged and provided with teeth *n* the same as the lever *h*. It will be seen that the interconnected parts *f* and *h*, on one hand, and the interconnected parts *j* and *m*, on the other, in each case constitute a bell-crank lever. The arms or levers *m* and *h* project toward each other and their toothed extremities are in mesh with each other. The shaft *d* is extended at one end beyond the frame of the mechanism, and to this extension of said shaft is secured one end of a lever *o*. (Shown in full lines in Fig. 2 and in dot-and-dash lines in Fig. 1.) When the lever *o* is vibrated, it will be seen that the bell-crank lever comprising the parts *j* and *m* will also be vibrated and that the movement will be transferred to the bell-crank lever comprised in the parts *f* and *h*. It will further be observed that the movements of the levers *j* and *f* will always be in opposite directions.

In view of the foregoing description any one skilled in the art to which my invention appertains will understand that with slight changes in the way of addition of details the harness-cord can be, in effect, directly connected to the levers *f* and *j*, so that the mechanism may be used to effect the simultaneous lowering of one half of the harness and raising of the other half—that is to say, the

mechanism may be used to effect what the ordinary cam-motion or other plain shedding mechanisms effect. The fact that my construction is extremely simple is one important reason why it is more desirable than the other kinds of mechanism above referred to for producing the simplest harness movements.

Where it is desired to employ the motion above referred to in connection with a pattern-chain and jacks for producing more complicated designs, I have provided also the mechanism now to be described to effect this.

In hangers *p*, which are adjustably secured to the plates or uprights *a*, are journaled the trunnions *q* of the cylinder *r*, carrying the pattern-chain *s*. This pattern-chain controls a series of fingers *t*, which are fulcrumed upon a rod *u*, connecting the plates *a*, and which are guided in slotted plates or grids *v*, also connecting said plates *a*, the one of said grids being disposed at the forward lower corners of said plates and the other being bolted to projections *w* thereon.

Freely suspended from the shaft *c* is a series of elongated plates or strips *x*, the pivoted end of each strip having an integral collar *y* on one of its faces and the free end of said strip being enlarged or thickened, as at *z*, said collars and the thickened portions of the strips affording spacing means therefor.

1 designates eyes, which are secured to the rear sides of the strips *x* and to which the harness-cords 2 may be attached.

3 are the jacks. These jacks are pivotally connected to the strips or plates *x* at their rear ends and extend horizontally forward therefrom, their free ends being formed in the shape of hooks 4. Said jacks are guided in the inner grid *v*, being situated over the fingers *t*. The hooked ends of said jacks are adapted to rest on and engage the knife *g*. The rear or innermost ends of the fingers *t* are upturned, as at 5, and normally extend into contact with the under sides of the jacks, the outer ends of said fingers being their longer and weightier ones and being, therefore, normally adapted to tilt the fingers so as to lift the jacks.

The operation of the card-cylinder produces the lifting of the outer ends of the fingers, and the result of this is the lowering of certain of the jacks, so that the vibrating knife *g* can engage said jacks and draw them forward and, through the suspended strips *x*, the harness-cords, and consequently the harness.

It should be remarked that the bar *k* engages the lower ends of all of the strips or plates *x* each time the parts return to their rest position—*i. e.*, that shown in Fig. 1—and that at this time said bar acts as an abutment for leveling the strips, and consequently the harness. If said bar is so arranged that when the parts are in their rest position it tends to slightly push all the strips *x*, the hooks 4 of the jacks will be out of frictional contact with the acting edge of the knife *g* and said jacks will be perfectly free to be lifted by the fingers when the mechanism is again put in motion.

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

1. In a shedding mechanism, the combination of a suitable frame, operatively-connected levers fulcrumed therein, said levers extending in approximately the same direction but being movable in relatively-opposite directions, movable devices engaging one of said levers, harness-cords connected to said devices and adapted to maintain them in contact with said lever, jacks also connected to said devices and adapted to engage the other of said levers, jack-controlling means, and operating means connected to one of said levers, substantially as described.

2. In a shedding mechanism, the combination of a suitable frame, operatively-connected levers fulcrumed therein, said levers extending in approximately the same direction but being movable in relatively-opposite directions, fulcrumed devices normally contacting and movable with one of said levers, harness-cords connected to said devices and adapted to maintain them in contact with said lever, jacks also connected to said devices and adapted to engage the other of said levers, jack-controlling means, and operating means connected to one of said levers, substantially as described.

3. In a shedding mechanism, the combination of a suitable frame, bell-crank levers fulcrumed therein, one arm of each lever having a toothed portion and said toothed portions intermeshing, fulcrumed members normally contacting and movable with one of said levers, the free arms of said levers projecting in approximately the same direction, harness-cords connected to said devices and adapted to maintain them in contact with said lever, jacks connected to said devices and adapted to engage the other of said levers, jack-controlling means, and operating means connected to one of said levers, substantially as described.

4. In a shedding mechanism, the combination of a suitable frame, bell-crank levers fulcrumed therein, one arm of each lever having a toothed portion and said toothed portions intermeshing, suspended members, harness-cords connected to said members, jacks pivotally connected to said members, jack-controlling mechanism, a knife carried by the free arm of one of said levers and adapted to engage said jacks, a leveling-bar carried by the free arm of the other of said levers and adapted to engage said members, and operating means connected to one of said levers, substantially as described.

5. In a shedding mechanism, the combination of a suitable frame, bell-crank levers fulcrumed therein, one arm of each lever having a toothed portion and said toothed portions

intermeshing, suspended members, harness-cords connected to said members, horizontal jacks pivotally connected to said members, a knife carried by the free arm of one of said levers and adapted to engage said jacks, a leveling-bar carried by the free arm of the other of said levers and adapted to engage said members, fulcrumed fingers engaging the under sides of said jacks, means for actuating said fingers, and operating means connected to one of said levers, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of October, 1899.

FRIEDRICH KESSELRING.

Witnesses:
ALFRED GARTNER,
J. B. NEWTON.