

W. J. MOXON & T. A. PATERSON.
 DOBBY OF LOOMS FOR WEAVING.
 APPLICATION FILED FEB. 14, 1907,

908,687.

Patented Jan. 5, 1909.

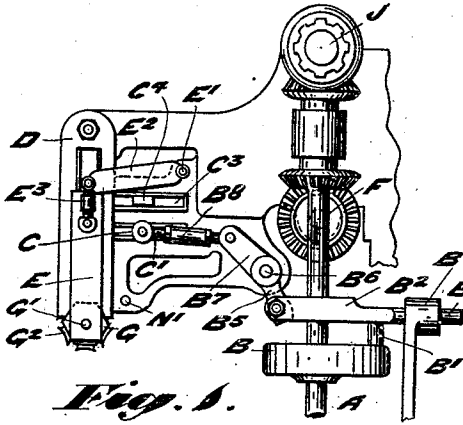


Fig. 1.

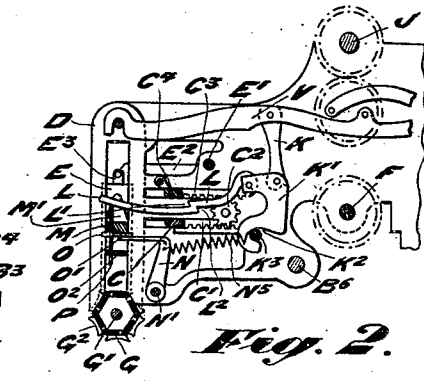


Fig. 2.

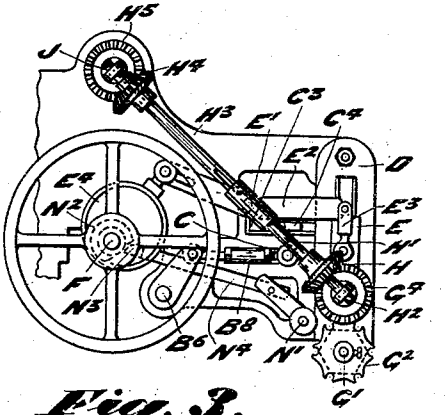


Fig. 3.

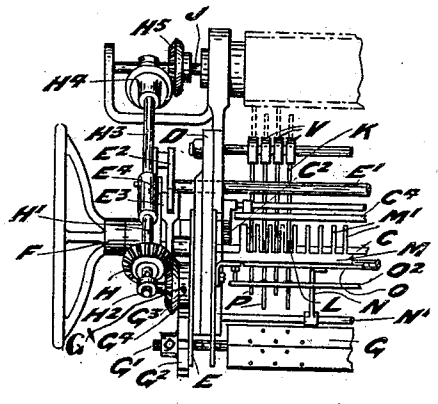


Fig. 4.

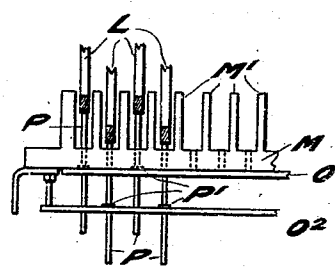


Fig. 5.

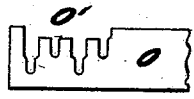


Fig. 6.

WITNESSES
 W. P. Bunk
 W. C. Bunk

INVENTORS
 William Jagger Moxon
 Tom Arthur Paterson
 W. M. Waller

UNITED STATES PATENT OFFICE.

WILLIAM JAGGAR MOXON AND TOM ARTHUR PATERSON, OF KIRKBURTON, NEAR
HUDDERSFIELD, ENGLAND.

DOBBY OF LOOMS FOR WEAVING.

No. 908,687.

Specification of Letters Patent.

Patented Jan. 5, 1909

Application filed February 14, 1907. Serial No. 357,336.

To all whom it may concern:

Be it known that we, WILLIAM JAGGAR MOXON, of Springfield Mills, Kirkburton, near Huddersfield, in the county of York, England, and TOM ARTHUR PATERSON, of Slant Gate, Kirkburton aforesaid, subjects of the King of Great Britain and Ireland, have invented certain new and useful Improvements in and Relating to Dobbies of Looms for Weaving, of which the following is a specification.

This invention relates to improvements in looms, and has for its object the construction and arrangement of certain mechanism whereby the jack levers of a loom are operated in a manner so as to prevent the jamming or sticking of the same. Further, the use of the said mechanism obviates the use of what are known as "lags" and "box pattern chains."

In describing our invention in detail, reference is made to the accompanying sheet of drawings, similar letters indicating similar parts, in which,

Figure 1 represents an elevation of the rear end portion of a dobbie loom with our improvement added thereto. Fig. 2 represents a sectional elevation. Fig. 3 represents a side elevation of an end portion. Fig. 4 is a front view in elevation. Figs. 5 and 6 are details hereinafter referred to.

Mounted at convenient distance upon the upright driving shaft A is a cam or eccentric B, provided with a guide race on its upper face with which engages a pin or the like B¹ attached to the under side of an arm B², such arm having one end B³ sliding in an eye B⁴ in such a manner that the arm may be given a backwards and forwards motion. The other end of the arm B² has attached thereto a lever or arm B⁵ which is in turn attached to a rocking shaft B⁶ passing across the loom frame. To the shaft B⁶ is attached an arm B⁷ which is in turn coupled to an adjustable rod B⁸, the other end of the rod B⁸ being attached to a rack C¹ on which is mounted a bar C (hereinafter called the lower bar). Engaging with the teeth of the rack C¹ is a pinion C² whereby motion is imparted to a rack C³ on which is mounted a bar C⁴ (hereinafter called the upper bar). As will be understood, these upper bars will move when operated in opposite directions, suitable slides being provided for the ends of the said bars in the loom frame.

It will be understood that the loom frame referred to is that portion of the frame at the end of the loom which carries the vibrating gear. It will be further understood that we do not confine ourselves to the particular details of the various parts of the mechanism hereinbefore described, for operating the lower and upper bars C and C⁴.

At each side of the loom frame and towards the end of the same is firmly attached a downward depending arm D, cut out to act as a guide for a slide E, and also to form a support for cross bars on which are mounted operating and guide pegs as hereinafter described.

The before mentioned slides E are operated from a rocking shaft E¹, suitably mounted across the frame, such shaft having arms E² on or towards both ends, each arm being connected to the slide by suitable links E³, such links being by preference, adjustable. The rocking motion is imparted to the rocking shaft E¹ by means of an eccentric E⁴ mounted on the ordinary wheel or lower cylinder shaft F, such eccentric operating a link or lever, attached towards one end of the shaft E¹ or by other suitable means such as a cam and levers or the like, in any well known manner. The shaft F is driven from the upright driving shaft A in the ordinary manner, see Figs. 1 and 3.

In suitable bearings in the before mentioned slides E is mounted a card cylinder G, by preference, many sided, the shaft G¹ of such cylinder carrying on one end a Geneva stop wheel G² of suitable form (Figs. 1, 2, 3, and 4) in order that the cylinder may be operated intermittently. The Geneva stop wheel G² is operated upon by cam G³ having a projection G^x to which is attached a bevel wheel G⁴. This cam and bevel wheel will rise and fall with the slide and card cylinder. Engaging with the bevel wheel G⁴ and at right angles to the same is another bevel wheel H mounted on a driving shaft H¹, one end of which passes through a swivel bearing H² formed on the end of the shaft or stud carrying the bevel wheel G⁴ and cam G³.

The driving shaft H¹ is formed in two portions H¹ and H³, one portion being as it were, telescoped into the other (Figs. 3 and 4). The other end of the driving shaft terminates in a bevel wheel H⁴ which is driven by a bevel wheel H⁵ from the shaft

J of the upper cylinder which operates the vibrators.

The upper and lower bars C and C⁴ before mentioned are operated upon from either one or both sides of the machine, as may be desired, though we prefer the connections to the rocking shaft B⁶ to be in duplicate, that is, at both ends.

Instead of operating the vibrator levers V, by means of pulleys or lags, and using a box pattern chain to obtain the desired effect, to each vibrator lever is attached one end of a link K, the other end of such link being attached to what might be termed a connecting piece K¹, such piece having formed towards its lower side a rounded recess K² which embraces a stationary shaft K³ suitably mounted across the machine, such shaft acting as a pivot, and thrust bearing for the said connecting piece. Towards the top of piece K¹ is hooked or attached one end of a lever L of suitable length (Fig. 2) having notches or projections L¹, L², formed on the upper and underside thereof. This lever passes between the before mentioned lower and upper bars C and C⁴ and is operated upon by such bars as hereinafter described. Each lever V, it will be understood, is fitted with the above described notched lever and connections.

Mounted across the back of the machine, and carried between the before mentioned depending arms D is a cross bar M, provided with a number of guides or projections M¹ between which the ends of the notched levers L may slide (Figs. 2, 4, and 5). The base of the bar is provided with apertures through which the operating pegs P may work and mounted immediately below this bar on an arm N connected to a rocking shaft N¹ is another bar O provided with recesses O¹ substantially of the form as shown in Fig. 6. The bar O, which holds up the pegs P or allows them to fall, as required, is given a sliding motion by means of a cam N² on the shaft F operating a tappet N³ attached to an arm N⁴ and connection on the rocking shaft N¹, (Fig. 3). Mounted below the bar O is another bar O² provided with apertures through which the pegs P may pass, the pegs P being provided with flanges P¹ in order to prevent them falling through the holes in the bar O². A spring N⁵ may be attached to the arm N in order to retract the positive forward movement of the shaft produced by the operation of the cam B. The cards are placed on the card cylinder G and suitable holes formed in the card and card cylinder.

When one of the operating pegs P projects over a hole in the card the same will drop

therein, and not be projected above the face of the bar M when the cylinder G is lifted by the slide and lifting mechanism, but when there is no hole for the peg to drop into, the notched lever L will be lifted owing to the peg being raised as shown in Fig. 2. The notches and recesses in the bar O serve to keep the pegs in the raised position owing to such pegs passing into the narrow portion of the recesses O¹ which retain the flanges P¹ of the pegs, or allow same to pass in the broader portion when the pegs will fall, this depending on the position of the bar O.

The levers L are pushed backwards and forwards by means of the top and bottom bars C⁴ and C operated as before described, and when such levers are operated by the bars and pegs they cause the vibrator levers V to be operated through the mechanism before described. The vibrator levers must be operated as the notched levers are operated and are therefore positive in their action, and cannot become jammed. It will be understood that any number of ordinary cards may be mounted on the cylinder G, pegs being provided on such cylinder for their guidance.

What we claim as our invention is:—

1. In dobby looms, the combination with the vibrator levers, notched levers connected therewith, upper and lower bars adapted to engage with said notched levers to actuate the same, pegs adapted to contact with the notched levers to move them into the path of the upper and lower bars, means for operating said bars and a rising and falling card cylinder for actuating the pegs.

2. In dobby looms for weaving, in combination with vibrator levers of means for actuating said levers including a vertically reciprocating card cylinder and means for operating the same, said means comprising a slide, means for reciprocating the slide and a swiveled telescopic driving shaft for rotating the cylinder.

3. In dobby looms, the combination with the vibrator levers, notched levers connected therewith, upper and lower bars actuating said notched levers, pegs for raising the ends of said notched levers, means for raising the pegs a bar having recesses therein adapted to engage with the pegs to hold the same in raised position and means for moving the bar into engaging position with said pegs.

In witness whereof, we have hereunto set our hands, in the presence of two witnesses.

WILLIAM JAGGAR MOXON.
TOM ARTHUR PATERSON.

Witnesses:

JOSEPH P. KIRBY,
EMILY JOHNSON.