R. Elliott,

Loom.

No. 110,640. Patented Jan. 3, 1871.

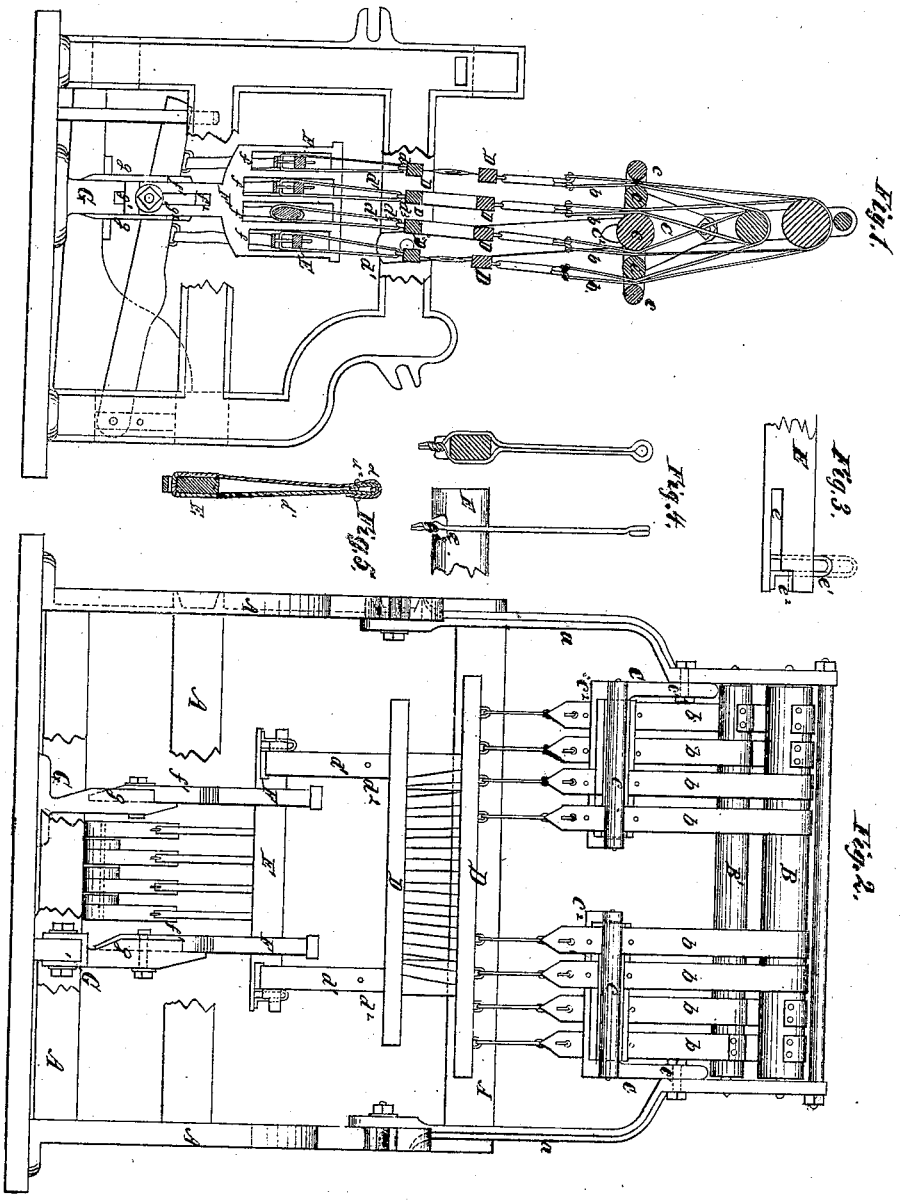

Fig. 1.

Fig. 4.

Fig. 3.

Fig. 2.

Witnesses:

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United States Patent Office.

ROBERT ELLIOTT, OF CHESTER, PENNSYLVANIA.

Letters Patent No. 110,640, dated January 3, 1871.

IMPROVEMENT IN 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, ROBERT ELLIOTT, of Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Looms; and I do hereby declare the following to be a full, clear, and exact description thereof, sufficient to enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side elevation of my loom, exposing the working parts.

Figure 2 is a front elevation of the same.

Figure 3 illustrates the manner in which the strap between the jack-bar and heddle is secured to the end of the jack-bar.

Figure 4 illustrates the wire link in two positions.

Figure 5 illustrates the attachment of the jack-strap to the heddle.

My invention consists of the employment of a series of guide-rollers for the straps, by which the heddles are suspended.

It also consists of the employment of upright guides for the jack-bars, and of an improved mode of attaching those straps to the heddles which connect said heddles with the jack-bars.

It further consists of an improved mode of attaching the above-mentioned straps to the jack-bars, and of the construction of a wire link to unite the heddles and jack-bars.

Referring to the drawing—

A is the frame of the loom, to which two uprights, *a a*, are fastened for supporting rollers B B', and frames C C.

These frames support a number of parallel friction-rollers, *c c c*, between which the heddle-straps *b b b* pass, to the heddles D D.

The frame C is fastened to the upright post *a* by an arm, c^1, and may have a brace or bridge-piece, c^2, extending transversely for the purpose of strengthening it.

The rollers *c c c* may be made of wood or metal, or of wood incased in a metal sleeve, and between them the heddle-straps *b b* pass to the heddles D D, to which they are suitably fastened.

To the lower part of the heddles are secured T-shaped pins d^3, to which straps d^1 are attached, in the following manner:

At each end of the strap a certain length is allowed for overlapping the cross-arm of the pin *d*. The vertical stem of the pin is passed through both ends of the strap where the lapping begins, and both lap ends are riveted together with the straps near their ends, at d^2.

In this manner the strap forms a loop, in which I insert the end of the jack-bar E, fig. 3.

A horizontal slot, *e*, is cut in the jack-bar, and a pin, e^1, inserted in the bar at right angles to the slot. When the strap is to be placed in this slot, the pin is raised, as shown by dotted lines, and the strap slipped in. The pin is then dropped, and the slot thus closed or locked.

The step e^2, on the end of the jack-bar, checks the upward motion of the pin e^1, and prevents it pulling out. The horizontal end of the pin e^1 is formed by bending after the pin is inserted into the jack-bar.

A cheaper connection between heddle and jack-bar is effected by my wire link, as seen at fig. 4. A single piece of wire is, at its center, provided with a loop by bending. It is then doubled backward until the ends meet, which are then united by twisting.

The wire link is next passed over the end of the jack-bar, and fastened at the notch *e*. By bending it as close as possible to the bar E, it prevents it rising and slipping from the notch.

The upper loop of the wire link presents a perfectly closed eye, with two thicknesses of wire above, which prevents it being lifted out of place, and guards against quick wear.

To prevent the unnecessary wear of the jack-bars and straps attached thereto, I pass the said jack-bars through the upright slots *f f*, made in the guides F F, which guides are fastened to the floor by means of brackets G G.

The uprights of these brackets are provided with parallel flanges *g g*, between which the shanks f^1 are fitted.

Slots g^1 are formed in these uprights, to correspond with slots f^2 in the shanks f^1, and the two uprights and shanks are secured together by means of bolts g^2, and a vertical adjustment is thus allowed.

All further connections with treadles, &c., are of usual construction, and do not necessitate present description.

The operation of my loom differs from that of others of this class in its smooth and almost noiseless movement, and the economical wear of its improved parts, which latter only amounts to one-third, or less, of the wear on unimproved looms.

A great advantage is gained in my looms, also, by placing the guide-rollers above, and vertical guides below, inasmuch as all noisy and injurious contact is prevented between the bars and frames, and the wear and tear of these parts are thus greatly diminished.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The loosely-pivoted frame C, and guide-rollers *c c c*, combined and connected with the heddles, straps, and upper rollers, all substantially as described.

2. The jack-bar, provided with the slot *e*, step e^2, pin e^1, and link d^1, substantially for the purpose specified.

The above signed by me this 26th day of August, 1870.

ROBERT ELLIOTT.

Witnesses:
KATE B. ULRICH,
SAMUEL ULRICH.