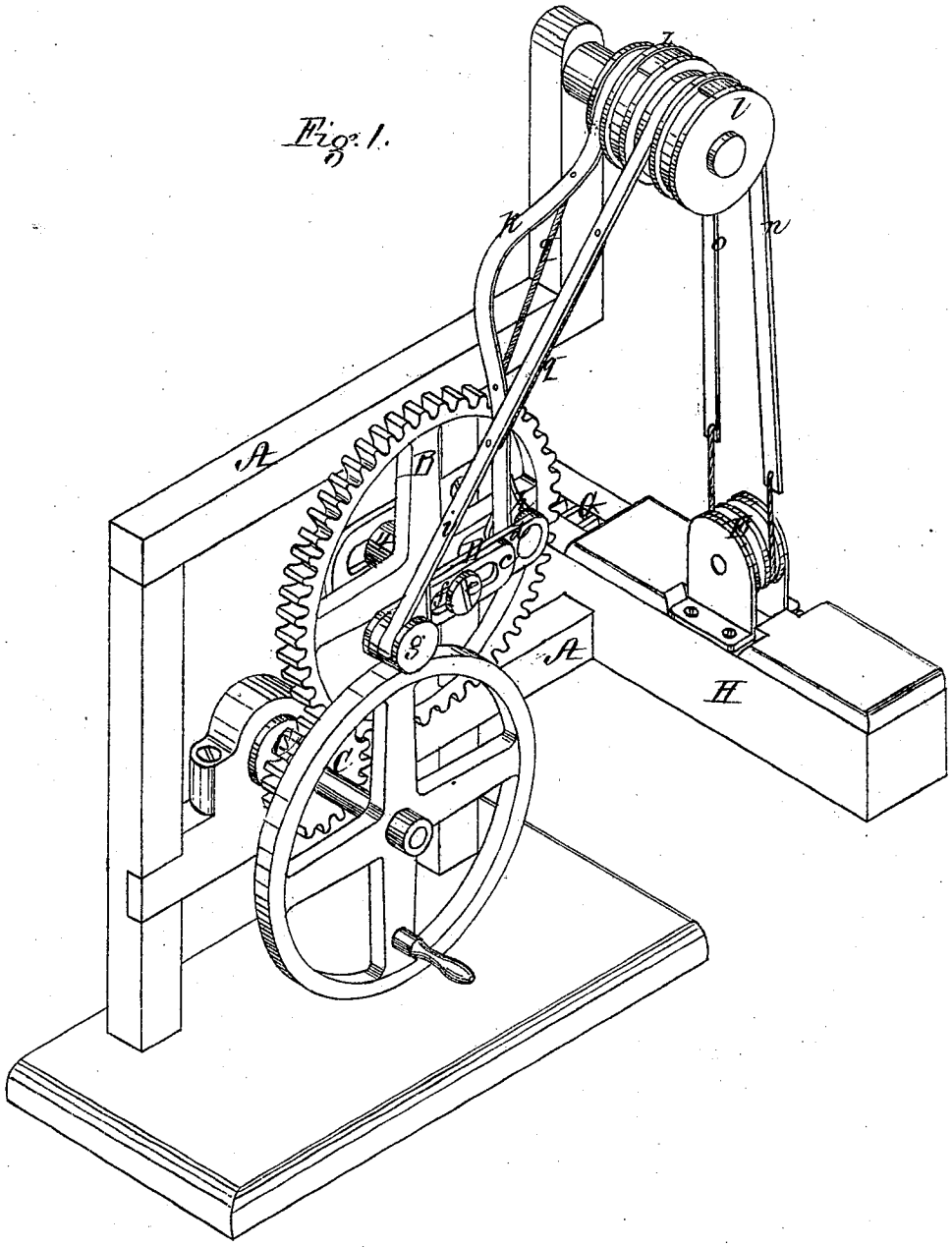
2 Sheets--Sheet 1.

T. MARTIN.

Improvement in Shuttle Actuating Mechanism for Looms.

No. 124,501. Patented March 12, 1872.

Fig. 1.



Witnesses,
W. W. Stearns
W. J. Cambridge

Inventor,
Thomas Martin

2 Sheets--Sheet 2.

T. MARTIN.

Improvement in Shuttle Actuating Mechanism for Looms.

No. 124,501. Patented March 12, 1872.

Fig: 2.

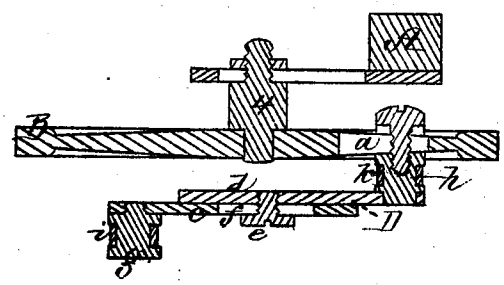
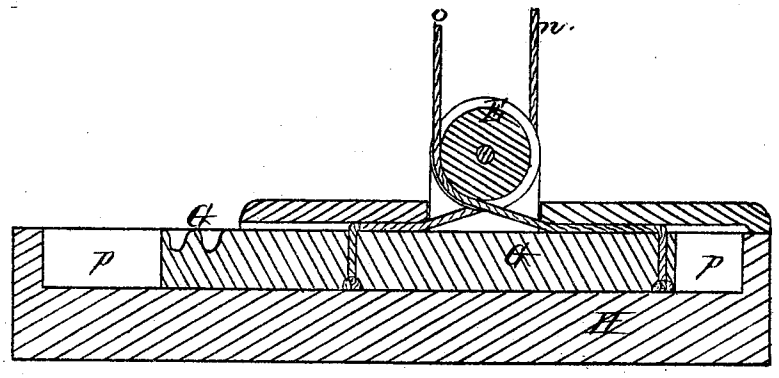


Fig: 3.



Witnesses,
H. W. Stearns
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Inventor,
Thomas Martin.

UNITED STATES PATENT OFFICE.

THOMAS MARTIN, OF CHELSEA, MASSACHUSETTS, ASSIGNOR TO THE BOSTON ELASTIC FABRIC COMPANY.

IMPROVEMENT IN SHUTTLE-ACTUATING MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. 124,501, dated March 12, 1872.

To all whom it may concern:

Be it known that I, THOMAS MARTIN, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented an Improved Shuttle-Motion for Looms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of my improved shuttle-motion. Figs. 2 and 3 are sections through the same.

My invention consists in a double crank for operating the straps or cords which are connected with the rack or other device for moving the shuttle or shuttles, pieces of elastic material being employed to take up the slack of the straps as the crank revolves, and thus prevent them from becoming entangled in the machinery or frame-work, by which construction an elastic and yielding action is produced, which enables me to run a loom at a high rate of speed without any liability of breaking the threads, while the mechanism is simple, compact, and inexpensive, and is situated on the outside of the loom, in a convenient and accessible position.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing, A represents a portion of the end of the frame-work of a loom on an adjustable stud, 4, projecting from which revolves a gear, B, which is driven by a pinion, C, which receives its motion from the driving-shaft in any suitable manner. D is a double crank, which is made adjustable in a slot, *a*, in one of the arms of the gear B. This crank is composed of two pieces, *c d*, connected together by a set-screw, *e*, passing through a slot, *f*, and by adjusting the crank in the slot *a* and sliding the portion *c* on the portion *d* the length of throw may be varied, as desired. To the crank-pins *g h* are secured the lower ends of two leather straps or cords, *i k*, the upper ends of which are secured to the peripheries of two pulleys, *l m*. To these pulleys are also secured two straps, *n o*, the lower ends of which pass in opposite directions under a double-grooved pulley, E, and are secured to the shuttle-rack G in such manner that as they are drawn up and down by the partial revolution of the pulleys, produced by the turning of the double crank, a reciprocating motion will be imparted to the rack, as desired. This rack G, which extends from one end of the loom to the other, travels in a groove, *p*, in the "batten" H, and actuates the rawhide gears, (not shown,) which throw the shuttles in a well-known manner. The straps *i k* have attached to them, at two points, a piece of elastic material, *q*, for the purpose of taking up the slack which must necessarily occur as the crank revolves, and the straps are thus prevented from flapping about and catching in the machinery. It is evident that a single strap may pass from each crank-pin over a pulley or guide to the shuttle-rack, instead of having two separate straps connected with each of the pulleys *l m*.

When fabrics of different widths are to be woven different-sized shuttles are required, and the amount of motion of the shuttle-rack must be correspondingly changed, which can be readily accomplished by varying the throw of the double crank by means of the adjustments before described.

The above-described mechanism, with its long leather straps, is elastic and yielding in its action, and moves the shuttles without any sudden jerk; consequently the loom can be run at a high rate of speed without breaking the yarn or thread, resulting in a great saving of time, and an increased production of the fabric being woven. Furthermore, the mechanism being outside of the frame-work, is in a convenient and accessible position, and does not occupy space required for any other purpose.

My improvement may be applied not only to looms for weaving narrow fabrics in which

a great number of shuttles are employed, but also to other descriptions of looms without requiring any material alteration therein.

Claim.

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

The pinion and its double crank D, in combination with straps or cords, provided or not with elastic "take-ups" *q q*, for operating the rack or other device for moving the shuttle or shuttles, arranged and operating substantially as described.

Witness my hand this 18th day of January, A. D. 1872.

THOMAS MARTIN.

Witnesses:
P. E. TESCHEMACHER,
N. W. STEARNS.