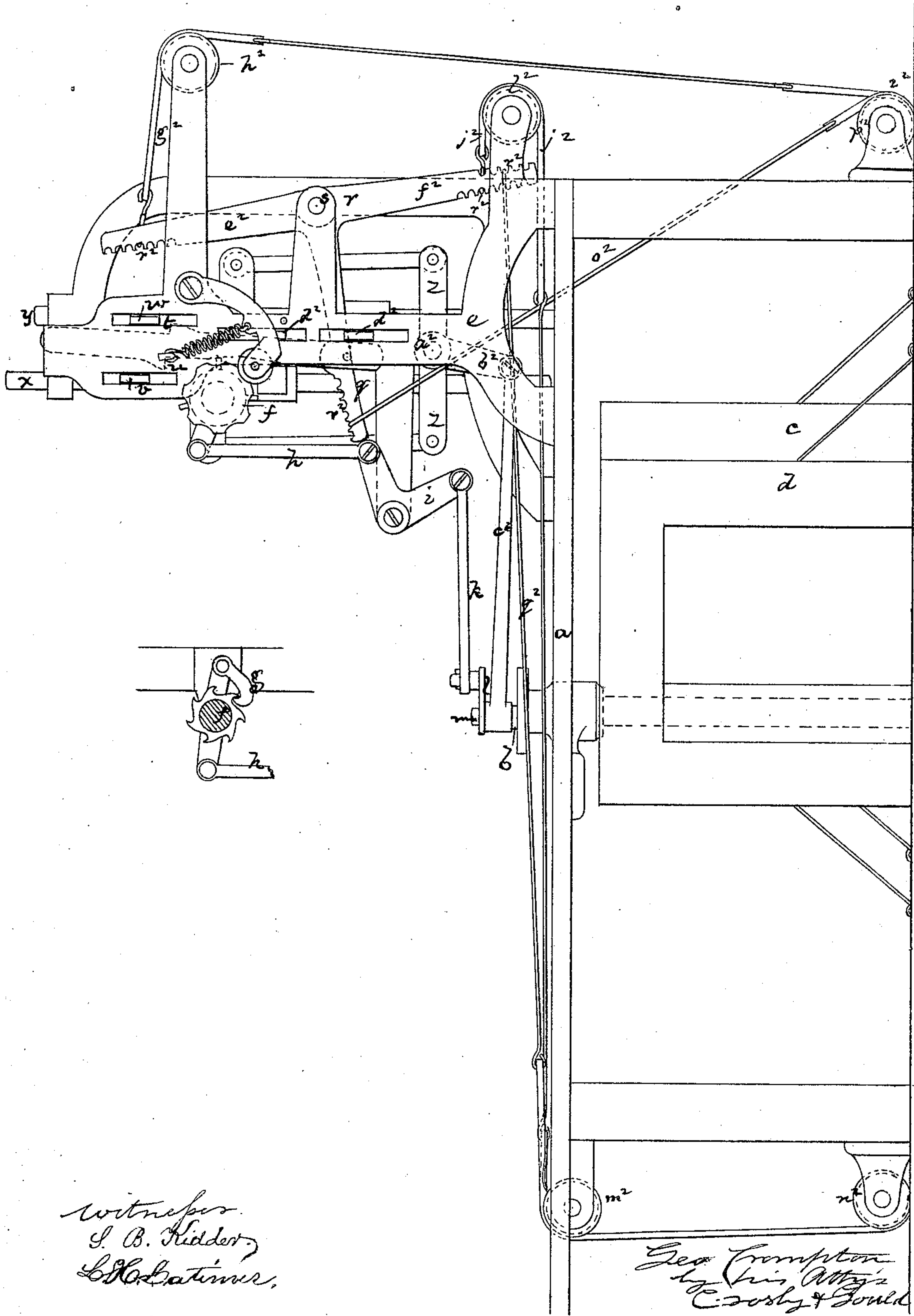


**G. CROMPTON.**  
**Loom-Shedding Mechanisms.**

No. 140,476.

Patented July 1, 1873.



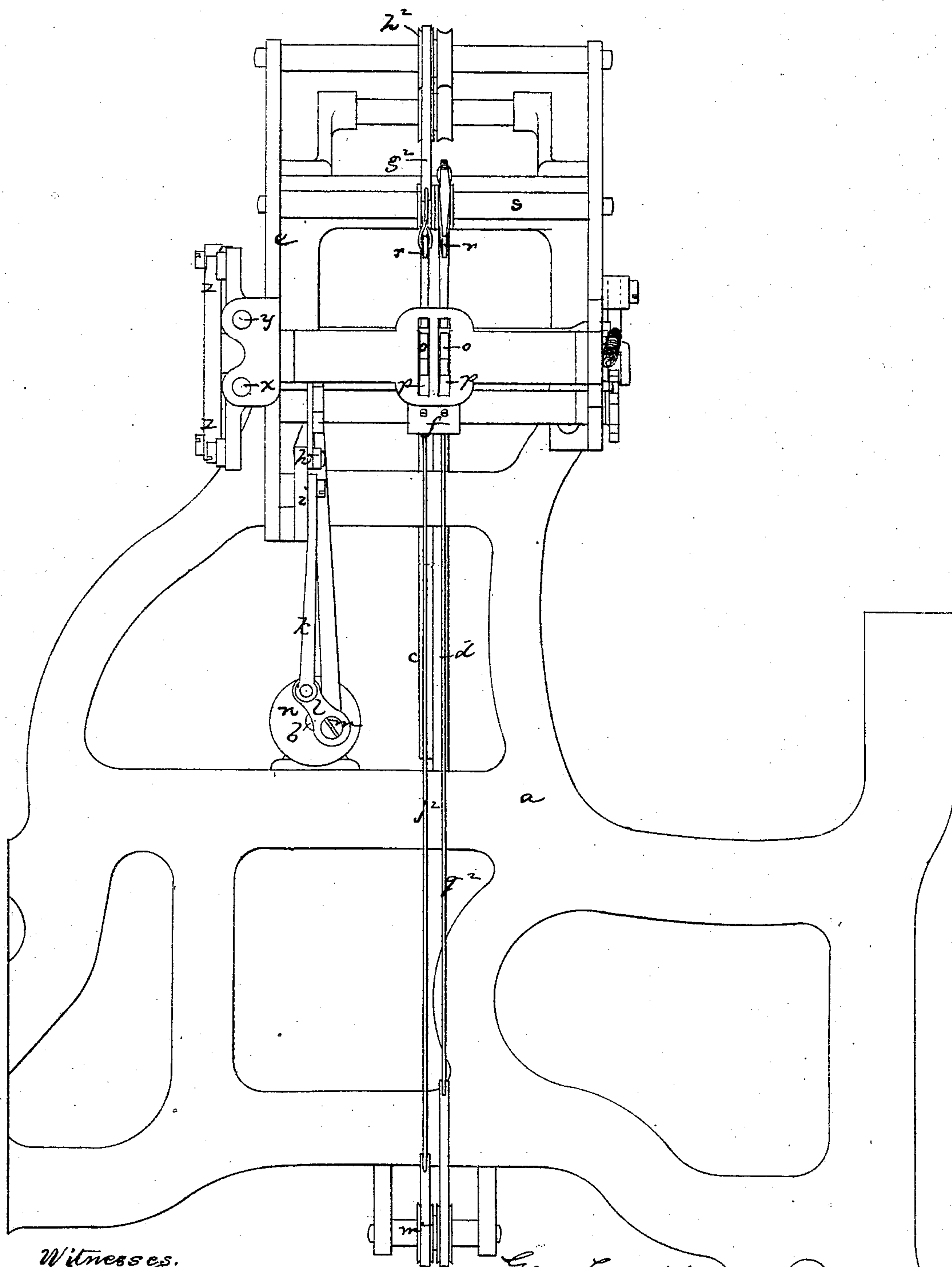
*Witnesses.*  
*J. B. Kidder,*  
*L. H. Catlin,*

*Geo. Crompton*  
*by his Atty's*  
*C. Crosby & Gould*

**G. CROMPTON.**  
**Loom-Shedding Mechanisms.**

No. 140,476.

Patented July 1, 1873.



Witnesses.  
J. B. Miller.  
L. H. Latimer.

Geo. Crompton,  
by his Attys.  
Cross & Gould



# UNITED STATES PATENT OFFICE.

GEORGE CROMPTON, OF WORCESTER, MASSACHUSETTS.

## IMPROVEMENT IN LOOM-SHEDDING MECHANISMS.

Specification forming part of Letters Patent No. 140,476, dated July 1, 1873; application filed November 2, 1872.

*To all whom it may concern:*

Be it known that I, GEORGE CROMPTON, of Worcester, in the county of Worcester and State of Massachusetts, have invented an Improvement in Looms; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates particularly to details of construction or organization of the harness mechanism of that class of fancy looms employing, in connection with a pattern chain or cylinder, horizontal hooked jacks for effecting the distribution of the harnesses to form the successive sheds, the invention being, however, applicable to other jack movements.

In the arrangement of the harness mechanism shown in the drawing, I arrange the jack-bars below the harness-levers, and jointed to vertical arms extending from said levers, the levers normally resting upon the pattern-cylinder by gravity, or being drawn toward the cylinder by the stress of the cording, and the cylinder being arranged between the jointed ends of the jack-bars and the hooked ends thereof, and the eveners operating upon the vertical arms of the harness-levers, while the cording for each harness-frame is from the opposite horizontal arms of the harness-levers, or from one of said arms and the vertical arm of the lever, the cording running over suitable sheaves, and the lever-arms being provided with notches to adjust the strain of the cording.

The invention consists, primarily, in combining a vertical arm of an angle-lever (jointed to or directly actuated by the jack-bars) with a horizontal arm, to which one end of the harness-cording is fastened, the other end of the cording being fastened to an oppositely-extending horizontal arm of the lever, or to the vertical arm directly actuated by the jack, the extremities of either or both arms being notched, for the purpose of grading the shed from back to front when the shed is formed.

The drawing represents, in end view and in front elevation, a loom-frame and harness mechanism embodying my invention.

*a* denotes the loom-frame; *b*, the shaft that operates the chain-cylinder and harness mechanism; *c d*, two of the harness-leaves; *e*, the frame in which is mounted the harness-operating mechanism. *f* is the chain or pattern cylinder, which cylinder is intermittently turned by a drag-pawl, *g*, connected by a link, *h*, lever *i*, and link *k*, with an arm, *l*, jointed to a crank-pin, *m*, extending from the crank-wheel *n*, at the end of the shaft *b*. *o o* denote two of the jacks or jack-bars, said bars being horizontal, with their outer ends passing through guide-slots *p*, and their inner ends jointed to vertical arms *q* of horizontal harness-levers *r*, fulcrumed on a shaft, *s*, each jack having an upper hook, *t*, and a lower hook, *u*, and each lower hook standing normally (or when resting against the periphery of the pattern-cylinder) in position to be operated by a lifter or depresser bar, *v*, while, when raised by the pattern chain or cylinder, the upper hook is carried into position to be operated by a lifter or depresser bar, *w*, the bar *v* being attached to and actuated by a slide-rod, *x*, and the bar *w* attached to and operated by a slide-rod, *y*, arms projecting from said slides being connected to two arms, *z*, of a rocker shaft, *a*<sup>2</sup>, an arm, *b*<sup>2</sup>, of which shaft is connected by a link, *c*<sup>2</sup>, with the crank-pin *m*. A horizontal evenner-bar, *d*<sup>2</sup>, is also attached to each slide-rod *x y*, said bars extending over the jack-bars and the vertical arms *q* of the harness-levers passing between them, so that the lever-arms are brought into the same vertical plane by the action of the evenner and depresser bars, for redistribution after each shed has been formed and the shuttle thrown. Each harness-lever is made with the vertical arm *q*, to which the jack is jointed, and against which the lifter and depresser bars act, and also with a horizontal arm, or with two opposite horizontal arms, *e*<sup>2</sup> *f*<sup>2</sup>, the cording of the harness-frame being either from the vertical arm to one of the horizontal arms of each lever, or to two oppositely-extending horizontal arms of each lever. One of the harness-levers I have shown as connected to the harness-frame by a cord, *g*<sup>2</sup>, running from the horizontal outer arm of the lever over a guide-sheave, *h*<sup>2</sup>, and another guide-sheave, *i*<sup>2</sup>, down to the top of the harness-frame, and another cord, *j*<sup>2</sup>, running over



a guide-sheave,  $l^2$ , and then vertically downward to a guide-sheave,  $m^2$ , at the bottom of the frame, from which sheave the cord passes horizontally to another sheave,  $n^2$ , and thence upward to the bottom of the harness-frame. With the other harness-lever, the cord  $o^2$  passes from the vertical arm  $q$  of the lever diagonally, or in an inclined upward direction, to a sheave,  $p^2$ , (side of the sheave  $i^2$ ), and then down to the top of the harness-frame, while the other cord,  $q^2$ , passes from the inner horizontal arm of the lever down vertically to a sheave at the bottom of the frame  $a$ , thence horizontally to a sheave,  $n^2$ , and thence upward to the bottom of the harness-frame. Each lever-arm to which the cording is attached is made with a series of notches,  $r^2$ , by means of which the inclination of the shed is effected, as may be necessary or desirable.

I claim—

1. The three armed harness-levers having their vertical arms connected with hooked jacks moved by the lifting and depressing and pattern mechanism, and notched, as shown and described, so that the harness-cording may be extended at option, either from two opposite horizontal arms of the same lever, or from one of said arms and the vertical arm of the same lever, as and for the purpose described.

2. The combination of the harness-levers provided with a vertical and horizontal arm, the harness-cording, horizontal jacks, lifter, depresser, and evener bars, and pattern chain or cylinder, when constructed and arranged to operate as shown and described.

GEO. CROMPTON.

Witnesses:

J. A. WARE,  
J. B. SYME.