2 Sheets--Sheet 1.

J. M. LINSCOTT.

Loom.

No. 164,924. Patented June 29, 1875.

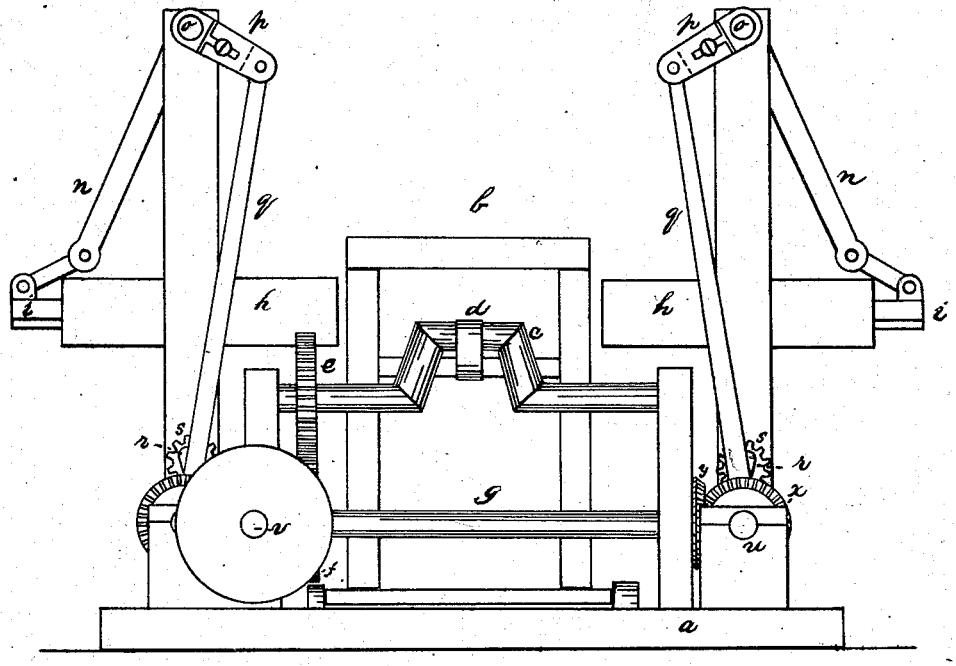

Fig. 1.

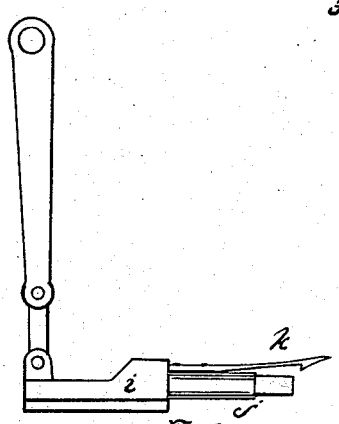

Fig. 2.

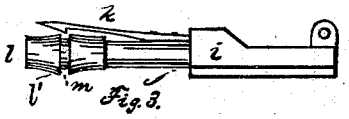

Fig. 3.

Witnesses:-
Frank H. Jordan.
John L. Hussey

Inventor:-
John M. Linscott.
per
Wm. Henry Clifford
atty.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

J. M. LINSCOTT.

Loom.

No. 164,924. Patented June 29, 1875.

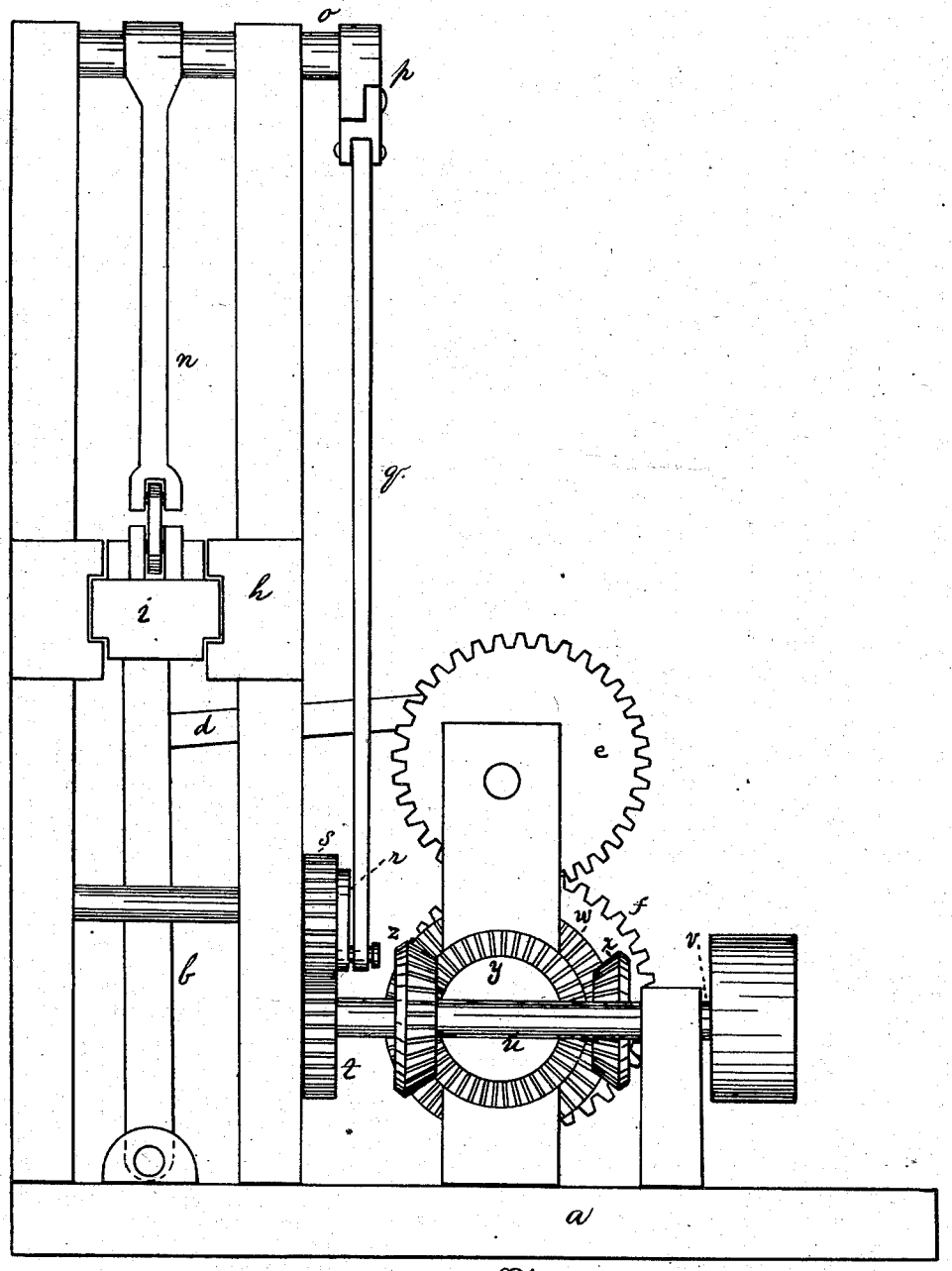

Fig. 4.

Witnesses:—
Frank H. Jordan.
John L. Hussey

Inventor:—
John M. Linscott
per Wm. Henry Clifford
atty.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

JOHN M. LINSCOTT, OF BUXTON, ASSIGNOR OF ONE-HALF HIS RIGHT TO FRANK H. JORDAN, OF PORTLAND, MAINE.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. **164,924**, dated June 29, 1875; application filed March 12, 1875.

To all whom it may concern:

Be it known that I, JOHN M. LINSCOTT, of Buxton, in the county of York and State of Maine, have invented certain new and useful Improvements in Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a back view. Figs. 2 and 3 are views of the shuttle and shuttle-rods. Fig. 4 is an end view.

Same letters show like parts.

My invention relates to certain improvements in looms, and these may be thus described in detail.

a shows the frame of the machine. *b* shows the lay pivoted at its lower end, and connected with the crank-shaft *c* by the arm *d*. *e* is a gear eccentrically attached to the shaft *c*. *f* is another eccentric gear upon the shaft *g*, and so set as to mesh with *e*, the longer radius of the one operating upon the shorter radius of the other. By the operation of these eccentric gears an accelerated movement is imparted to the lay in front of its pivotal point, and a retarded movement when behind its pivotal point. This movement is indispensable, inasmuch as it is necessary for the lay to beat up and return in a very rapid manner, and when back of the shuttle-race it should move with a slower motion in order that the shuttle may have sufficient time to pass from one side of the loom to the other. *h h* are guides on either side of the loom in which work the shuttle-slides *i i*, having the shuttle-arms *j j* for the purpose of carrying the shuttle *l*, as will be hereinafter more fully described. These arms are provided each with a spring-clutch, *k*, which serves to automatically pass and repass the shuttle from one arm to the other. This shuttle *l* is cylindrical in shape, and has in its center a raised part or bulb, *l'*, provided with a groove, *m*. The shuttle is hollow and made to nicely fit over the end of the arm *j*, allowing the shuttle-clutch, when in this condition, to rest upon the outer periphery of the shuttle, as shown in the drawing. Thus, when the shuttle is passed upon one arm the spring-clutch upon that arm slides along on the outside of the shuttle until it reaches the groove *m*, when it springs down into said groove and holds the shuttle securely to the arm. Then, as the two arms approach each other, the arm at the opposite end of the shuttle enters that end of the said shuttle, and as they are brought together the spring-clutch upon this arm slides under that upon the other, and forces it up out of the groove, and it, in its turn, springs into the said groove and locks the shuttle to its arm in the same manner as before described.

Motion is imparted to these shuttle arms or rods by the following devices: *n n* are jointed levers, pivoted at their lower ends to the shuttle-slides, and having their upper ends rigidly connected with the rock-shaft *o*. *p p* are arms on these shafts and rigidly connected thereto. *q q* are levers attached to *p* at one end, and at the other end to the cranks *r r* on the eccentric gears *s s*, situated below, as illustrated. These gears *s s* are operated by the eccentric gears *t t* upon the shafts *u u*. Thus, as these shafts are rotated, the gears *s* and *t* being so hung or set upon their respective shafts that the longer radius of the one operates upon the extremity of the shorter radius of the other, an accelerated and retarded motion is imparted to the shuttle-arms through the medium of the devices before described. By having these eccentric gears properly adjusted relative to the levers *q*, the retarded motion of the shuttle-arms will be produced when the accelerated motion is given to the lay, and the accelerated motion will be given to the arms when the retarded motion is given to the lay.

These devices before described are operated from a single shaft, *v*, by means of the gear *w* on the shaft *g*, which matches a gear, *x*, on the shaft *v*, the said shaft *g* carrying at each end a beveled gear, *y*, which matches the beveled gear *z* upon the shaft *u*. Thus, as the shaft *v* is rotated, the motions above described are imparted to the lay and shuttle-rods.

By having the levers *n* jointed, as shown, they form a toggle which materially aids in

producing the accelerated and retarded movement before described.

The cop or spindle upon which the thread is wound is to be attached in any convenient manner to the side of the shuttle. In this loom the motions of the lay and shuttle are of a positive character, and the violent throw of the shuttle is prevented.

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

1. The shuttle *l*, having bulb *l'*, provided with a groove, *m*, and combined with the shuttle-arms *j j*, and spring-clutches *k k*, all operating together, substantially as and for the purposes set forth.

2. The combination of shuttle-arms *j j*, having spring-clutches *k k*, and the shuttle *l*, constructed as described, with levers *n n* and *q q*, arms *p p*, cranks *r r*, and eccentric gears *s* and *t*, all operating together, substantially in the manner described.

3. In combination with the lay *b*, the arms *d*, the crank-shaft *c*, and eccentric gears *e f*, the shuttle *l*, constructed as described, shuttle-arms *j j*, and clutches *k k*, all operating together in the manner set forth.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

JOHN M. LINSCOTT.

Witnesses:
WM. HENRY CLIFFORD,
CHARLES. E. CLIFFORD.