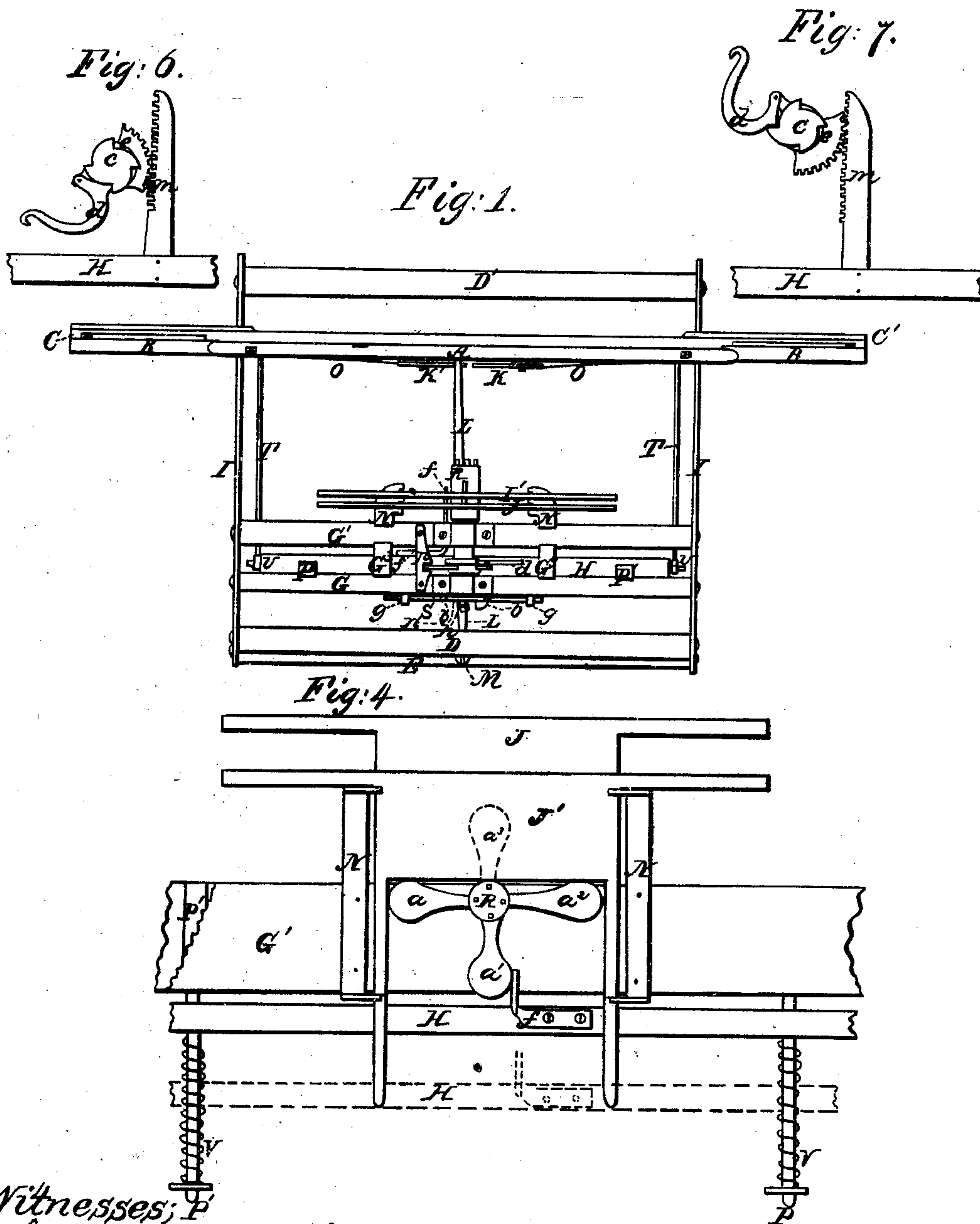


L. Scofield. Shedding.

Sheet 1-2 Sheets.

N^o 69,711.

Patented Oct. 8, 1867.



Witnesses; P
 Sylvanus D. Locke
 G. H. Williston

Inventors;
 Levi Scofield

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Fig: 3.

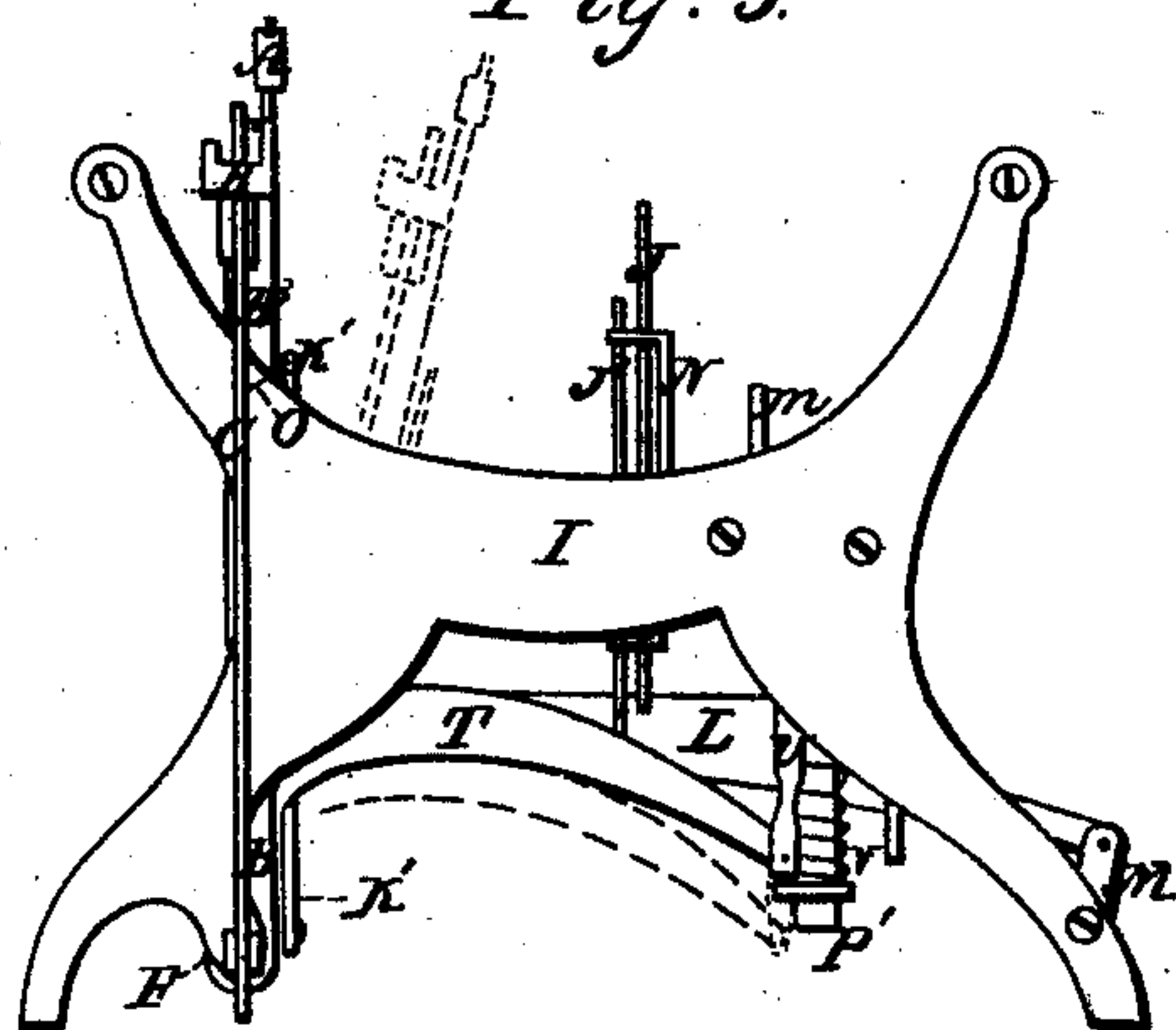


Fig: 2.

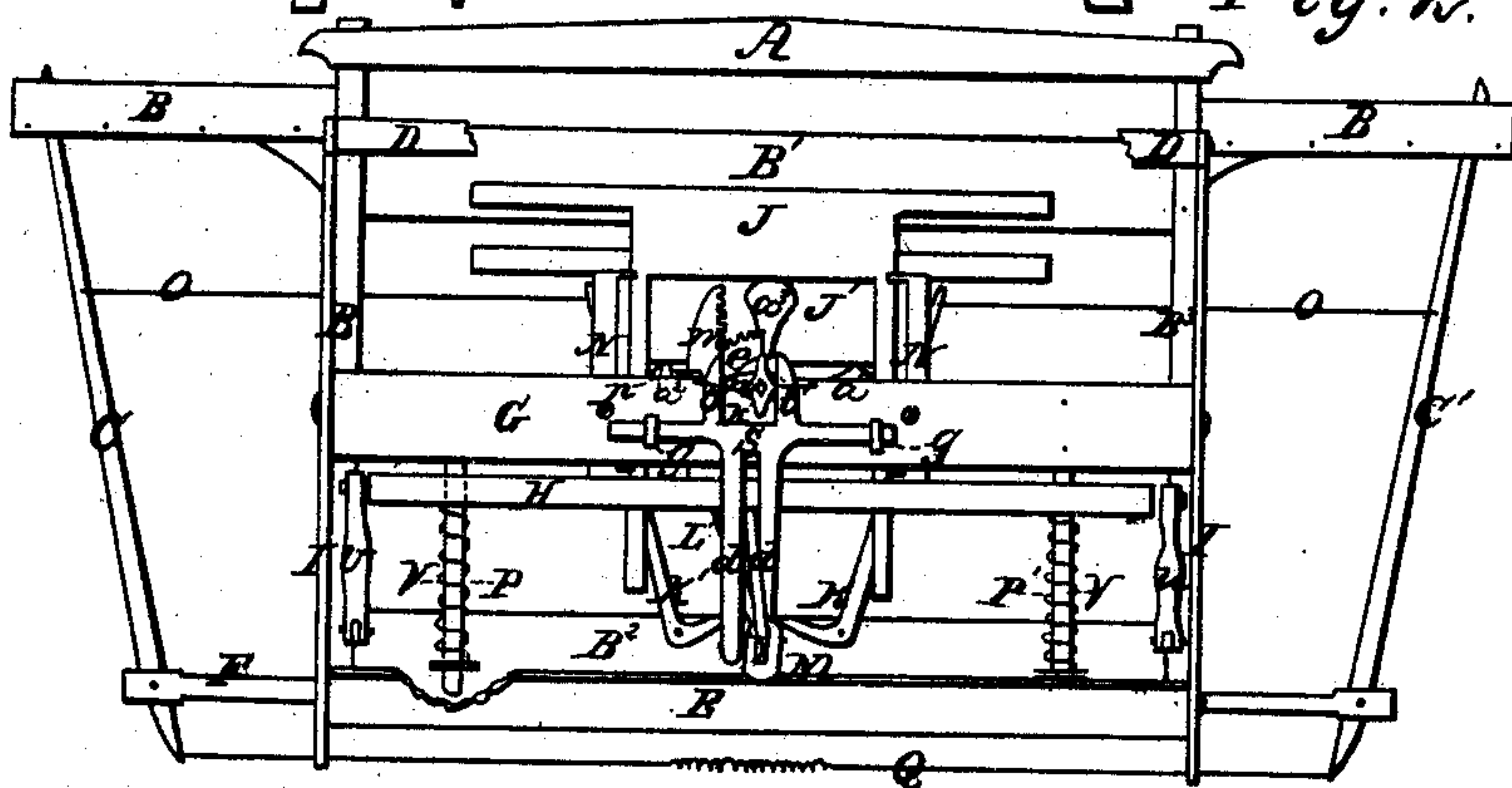
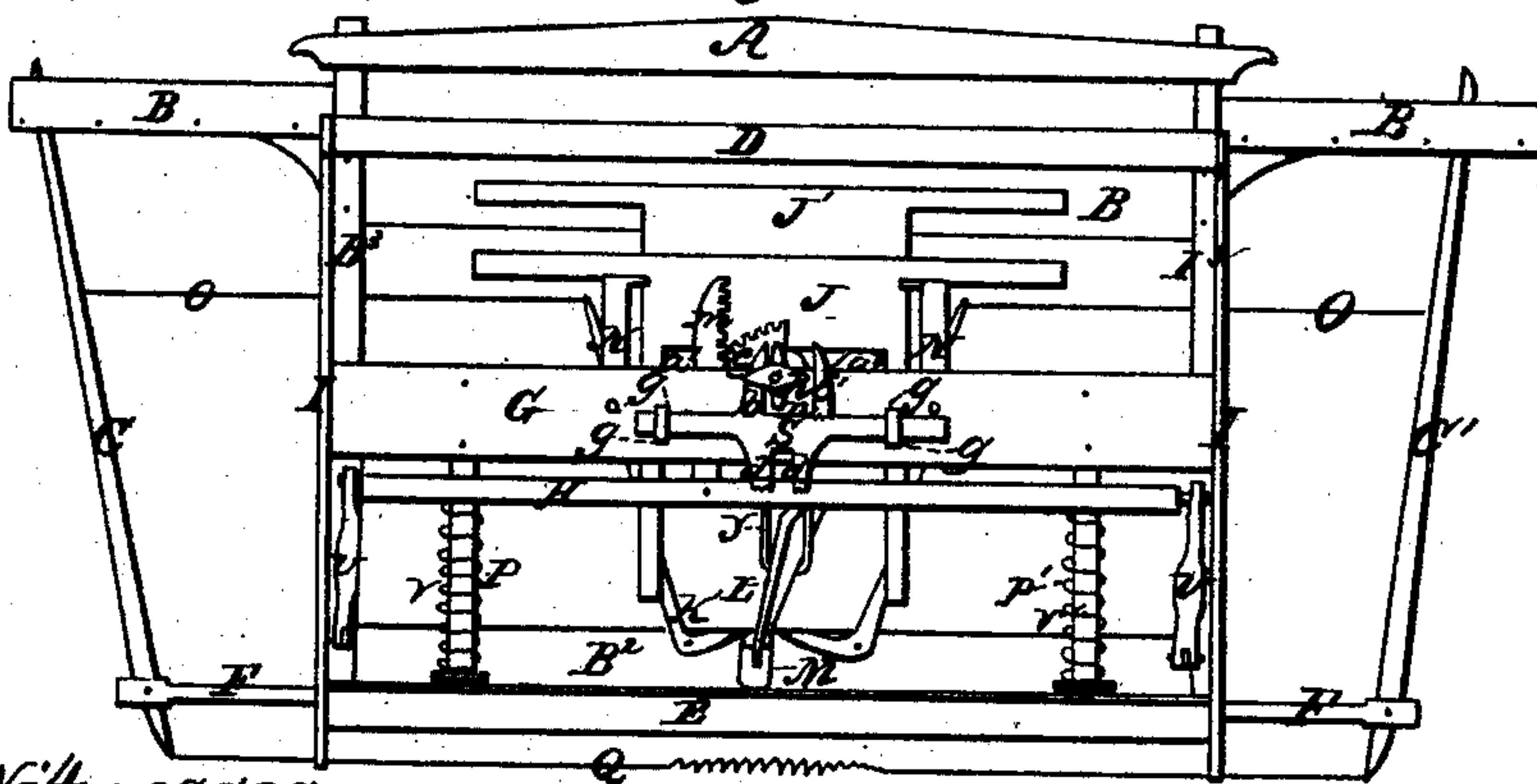


Fig: 5.



Witnesses;

Sylvanus D. Locke
G. H. Williston

Inventor;

L. Scofield

United States Patent Office.

LEVI SCOFIELD, OF FARMINGTON, WISCONSIN, ASSIGNOR TO HIMSELF
AND JUSTIN B. WAIT, OF THE SAME PLACE.

Letters Patent No. 69,711, dated October 8, 1867.

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, LEVI SCOFIELD, of Farmington, Jefferson county, in the State of Wisconsin, have invented a new and useful Improvement in Looms; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view.

Figure 2 is a back view or elevation.

Figure 3 is an end view or elevation.

Figure 4 is a view from the front of some of the inner parts of my loom.

Figure 5 is similar to fig. 2, but showing the treadle and operating mechanism in a different position; and

Figures 6 and 7 are detail drawings, showing the operation of the cam-shaft.

The nature of my invention consists in the specific construction and arrangement of the operating mechanism of harnesses and treadles of looms, whereby the same are uniformly and efficiently operated, substantially as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I provide my loom with a suitable support or framework, D D' E I, and the ordinary appendages, as the hand-rail A, shuttle-box B, lay or batten B¹, batten-arms B³, girt-connecting batten-arms B², picker-staff C, picker-swivels F, picker-levers K and K', treadles L, stepping-bar H, guides P P' for stepping-bar, arms T attached to batten-arms, and connecting-links U, for operating stepping-bar; rack m, cam-shaft R, cams $a a^1 a^2 a^3$, harness J J', and shuttles, beams, and other parts not shown. The sliding bar S works on the outer face of the back girt G, and is retained in position by the clasps g. The double cams h n on the cam-shaft R work against the arms b b' of the sliding bar S, while the legs d of the bar S strike the treadle L. The arm b' is set out from the bar so as to cause the cam h to work against it, and the cam n against the arm b, as shown. The rack m, secured to the stepping-bar, is kept in position by the guide p, figs. 1 and 2, and works in the pinion e that plays loosely upon the cam-shaft R. On the cam-shaft, immediately in front of the pinion e, is keyed a ratchet pinion, or the shaft itself may be made ratchet-faced, as shown at e. Upon this ratchet-face works the gravitating dog or pawl d, figs. 1, 6, and 7, that is pivoted on a spur of the pinion e, as shown. To prevent the momentum of the cam-shaft R from carrying the cams $a a^1 a^2 a^3$ beyond the proper stopping point, and so, by carrying up one of the cams to meet the descending harness, preventing the full downward movement of the latter, and a full shed of the warp, (a difficulty hitherto frequently met,) I attach to the forward face of the stepping-bar H a bunting or stop-lever, f, figs. 1 and 4, that at the proper time, owing to the movement of the stepping-bar, is interposed to stop the cams in the desired position, and then is again withdrawn when it is desirable the cam-shaft should revolve. By driving the batten, batten-arms, &c., backward to the position shown by dotted lines in fig. 3 the forward ends of the levers T are driven down, as shown by dotted lines in the same figure, carrying with them (by means of the connecting-links U) the stepping-bar H that in turn drives down both the treadle L and the rack m. This downward movement of the rack revolves the pinion e and carries up the gravitating dog d to the position shown in fig. 7, the latter sliding over the ratchet c. The end of the treadle moving down strikes or carries down the horizontal end of the picker lever K', (as shown in fig. 2,) and so, by means of the strap O and the picker-staff C, operating the shuttle in one direction. By returning the batten, batten-arms, &c., to the first position the stepping-bar H is raised, carrying up with it the rack m and the treadle L. The rack moving up causes (by means of the pawl d and ratchet e) the shaft R to make one-fourth of a revolution, thereby, by means of the cams $a a^1 a^2 a^3$, operating the harnesses J and J', and by means of the cam h and sliding bar S swinging the treadle L (pivoted to the treadle-swivel M) to the right or opposite side of the loom, as shown in fig. 5. Driving the batten, batten-arms, &c., again backward; the rack and treadle are again driven down, the rack revolving the pinion e, and carrying up the pawl d, as before, while the treadle this time strikes and carries down the horizontal end of the picker-lever K and operates the other picker-staff C, so driving the shuttle in the opposite direction or returning it to its first position. Again returning the batten, batten-arms, &c., to their first position, the rack m is again driven up and the cam-shaft revolved, operating again the

harnesses, and, by means of the cam *n* and sliding-bar, swinging the treadle again to the left, as shown in fig. 2. The downward movement of the stepping-bar *H* not only operates the treadle and shuttle but removes the stop-bar *f* from its position in front of the cams *a* *a*¹ *a*² and *a*³, as shown by dotted lines in fig. 4, while the return upward movement of the stepping-bar not only revolves the shaft *R* so as to bring down another of the cams *a* *a*¹ *a*² and *a*³, but interposes in front of it at the end of its desired movement the stop-bar *f*, thereby preventing the cam from passing farther, and closing the shed of the warp. It will be seen that after the sliding bar has been operated to the right by the cam *h* working against the arm *b*' the sliding-bar is prevented from passing farther in that direction than it is driven by the cam by the arm *b* striking the side of the cam *n*, and that, after the sliding bar has been operated to the left by the cam *n* working against the arm *b*, the sliding-bar is prevented from passing farther in that direction, also by the arm *b*' striking against the side of the cam *h*, thereby holding it (the sliding bar) securely during the pauses in its necessary movements, or while the shuttle is being thrown.

What I claim, and for which I desire Letters Patent, is—

1. The stop-bar *f*, when attached to the stepping-bar *H*, and used to stop the cams *a* *a*¹ *a*² and *a*³ alternately, thereby preventing the momentum of the cam-shaft from carrying up too far one of the cams that in turn would prevent the descent of the harness and a full shed of the warp, substantially as described.
2. The sliding bar *S*, when constructed with the arms *b* and *b*', the arm *b*' set out from the face of the bar so as to allow the cam *n* to work against the arm *b* and the cam *h* against the arm *b*', and used to operate the treadle *L*, substantially as and for the purpose set forth.
3. The double cams *h* and *n*, when attached to the cam-shaft *R*, and used to operate the sliding bar *S*, and at the same time holding the latter and the treadle in position while the shuttle is thrown, substantially as and for the purpose set forth.

LEVI SCOFIELD.

Witnesses:

S. D. LOCKE,

G. H. WILLISTON.