Sheet 1, 2 Sheets.

J. J. Kendall.

Hand Loom.

No. 27,290. Patented Feb. 28, 1860.

Fig: 1.

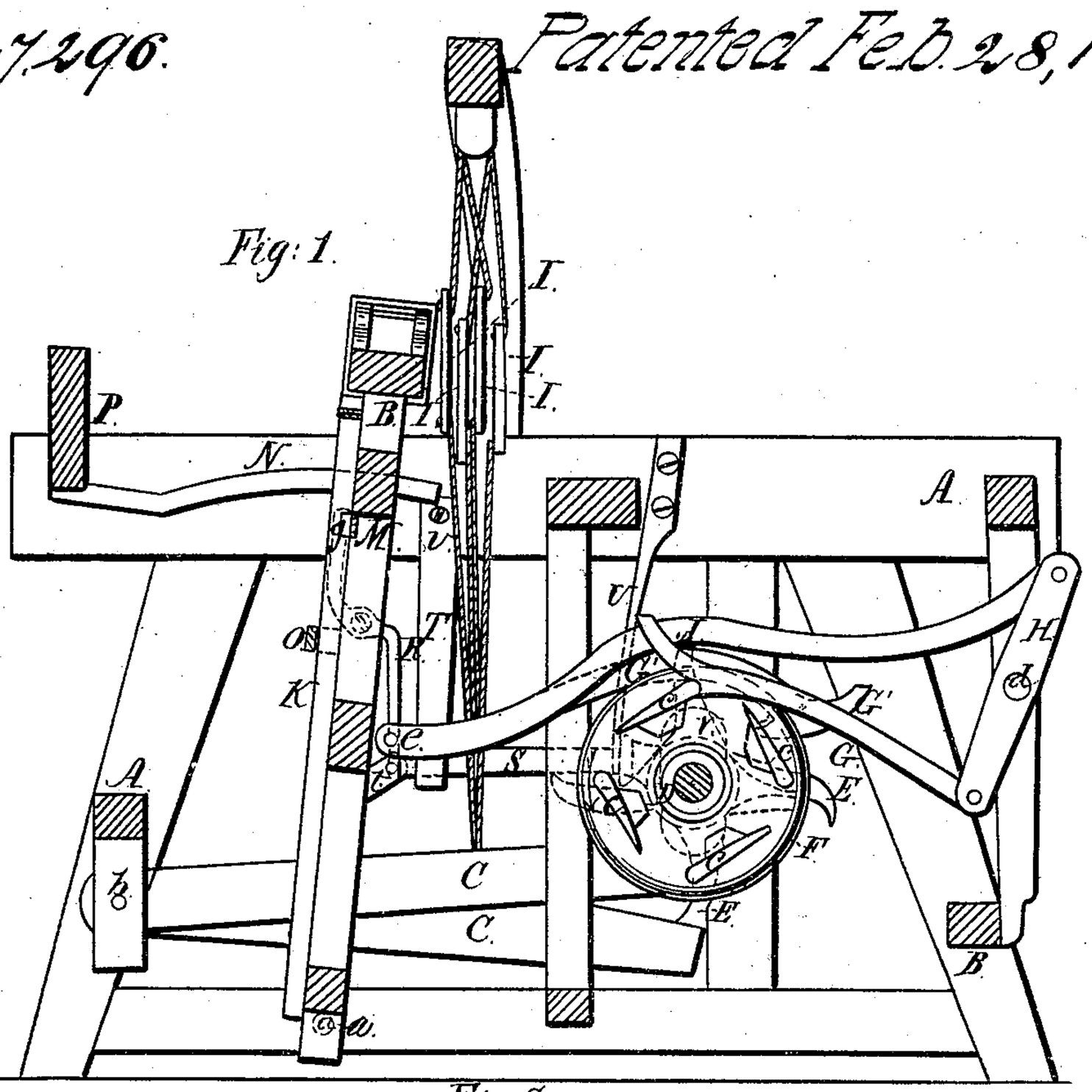
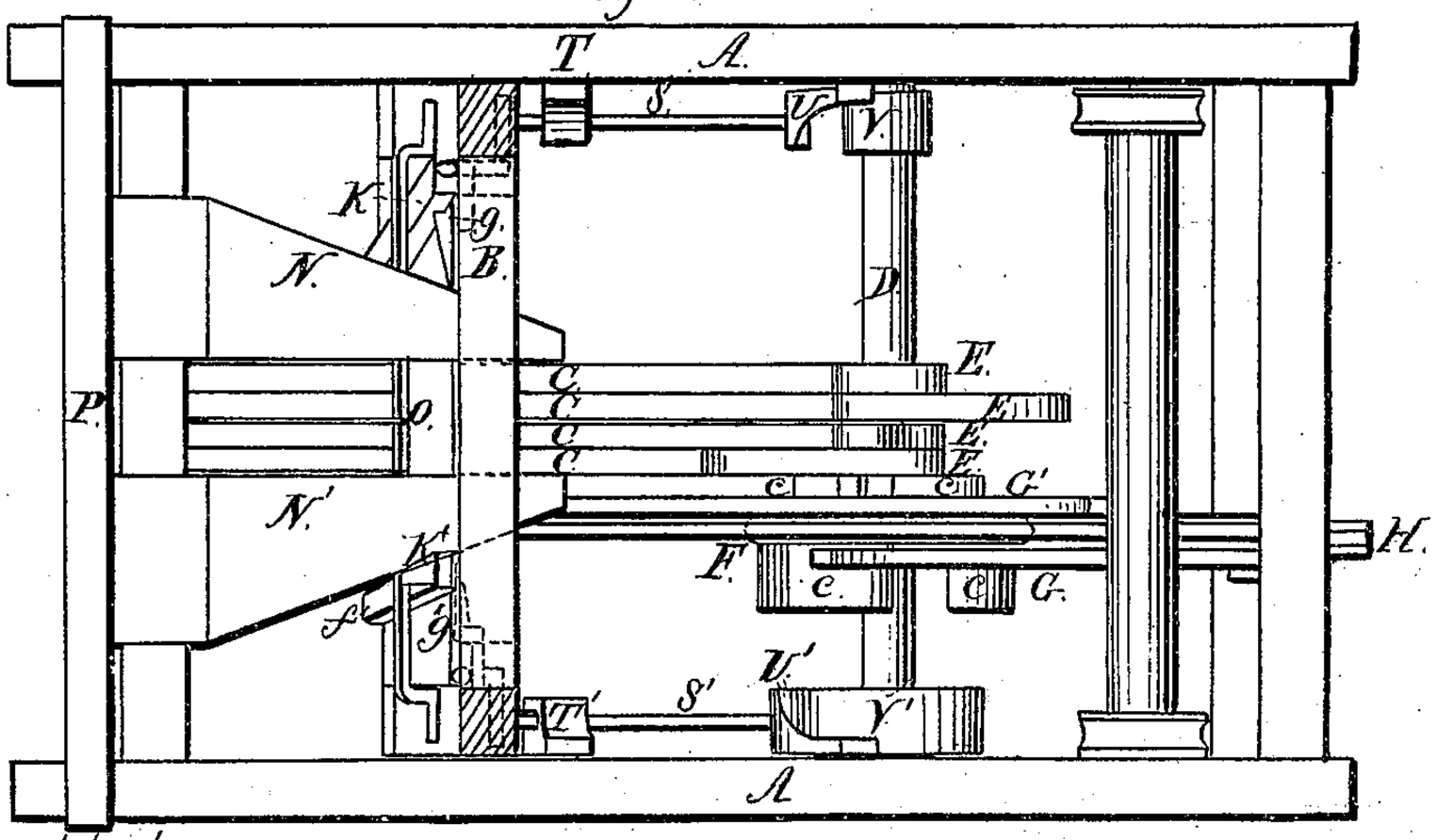


Fig: 3.



Witnesses:
C. W. McCord
H. A. Shelton

Inventor:
J. J. Kendall

Sheet 2, 2 Sheets.

J. J. Kendall.

Hand Loom.

No. 27,296. Patented Feb. 28, 1860.

Fig: 2.

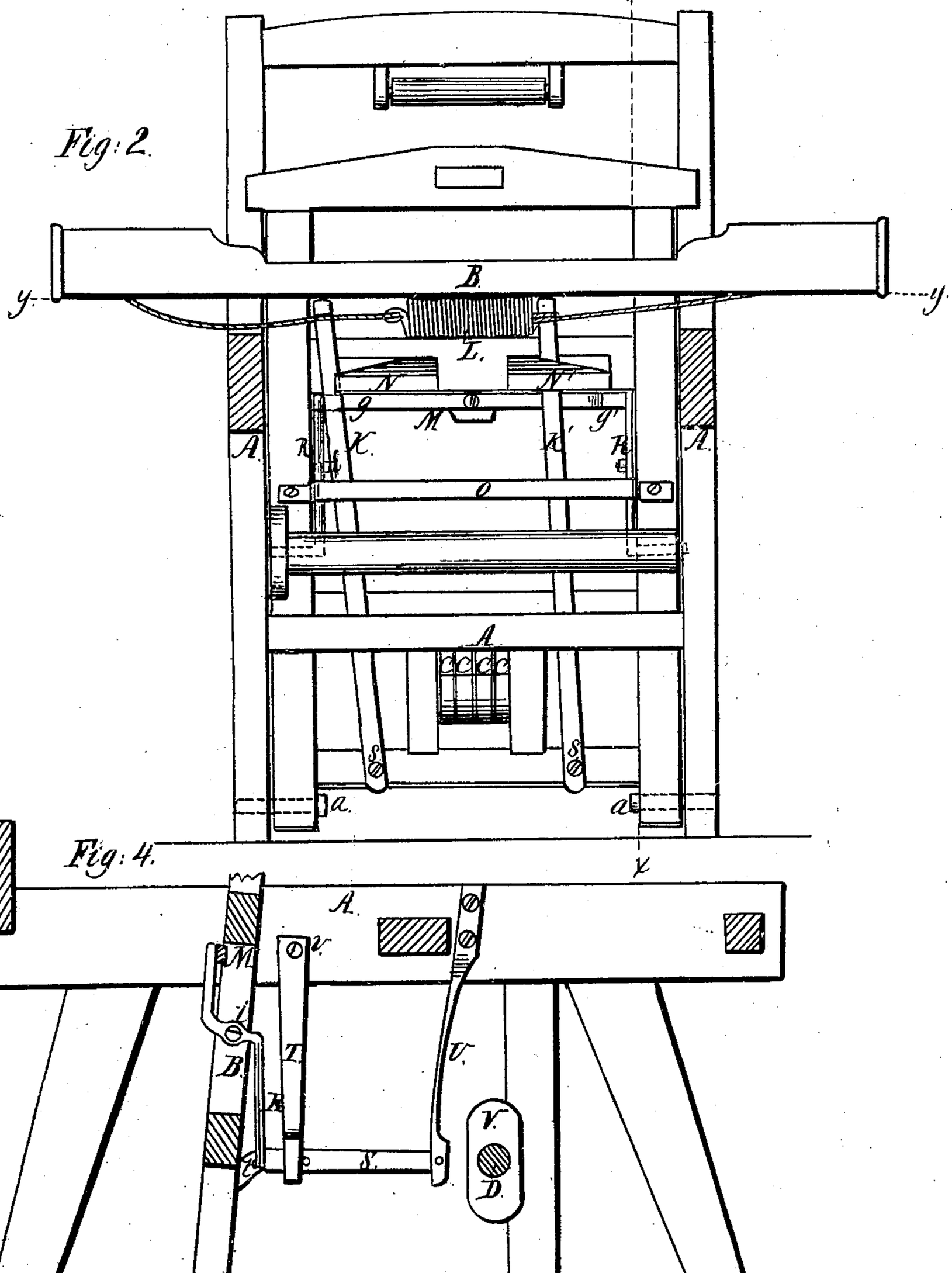


Fig: 4.

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UNITED STATES PATENT OFFICE.

J. J. KENDALL, OF CORINTH, MISSISSIPPI.

LOOM.

Specification of Letters Patent No. 27,296, dated February 28, 1860.

To all whom it may concern:

Be it known that I, J. J. KENDALL, of Corinth, in the county of Tishomingo and State of Mississippi, have invented certain new and useful Improvements in Looms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a vertical section of a loom with my improvements taken in the plane parallel with the side of the loom indicated by the red line *x*, *x*, in Fig. 2. Fig. 2, is a front view of the same with the breast beam removed. Fig. 3, is a horizontal section of the same in the plane indicated by the red line *y*, *y*, in Fig. 1. Fig. 4, is a side view of part of the shuttle operating mechanism.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in certain mechanism whereby the vibration of the lay is made to impart motion to the harness at the proper time, such mechanism enabling the treadles to be dispensed with in hand looms, and being applicable to power looms.

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

A, is the framing of the loom and B, is the lay swinging from centers *a*, *a*, at the bottom.

C, C, C, are the treadles for operating the harness arranged to vibrate on a pin *b*, in the manner common to hand looms. The harness I, I, may be applied and connected in any well known manner.

D, is a horizontal shaft arranged near the back of the loom in bearings in the framing A, and having upon its cams E, E, E, of proper form and properly arranged to produce the operation of the harness treadles C, C, C, by an intermittent rotary motion of the said shaft. F, is a wheel fast upon the said shaft D, and having teeth *c*, *c*, on each side, of such form and so arranged that one on each side will be operated upon alternately to impart a part of a revolution to the said shaft and its cams in the direction of the arrow shown in Fig. 1, every time the lay moves forward or backward, by means of two pawls or dogs G, G′, the latter of which is attached to the lay and the former to a lever H, which works on a fixed fulcrum *d*, at the back of the loom and which is operated by a rod J, which connects it with the lay at *e*. The drawing represents four cams, and represents the wheel F, with four teeth on a side, but this may be varied to suit the harness as will be readily understood by persons familiar with looms.

K, K′, are the picker rods arranged to vibrate on pins *f*, *f*, which attach them to the bottom of the lay, connected together by a strong coiled spring L, which exerts its force in a manner to draw the picker rods toward each other.

M, is a bar spring having two latches *g*, *g′*, one near each end, and secured to the front of the lay in such a manner as to be capable of locking the picker rods K, K′, near their respective sides of the loom and so keeping the spring L, strained.

N, N′, are two stationary wedges secured to the breast beam P, of the loom and arranged in such a manner that as the lay moves forward the picker rods will pass along the outer edges of the said wedges, and by that means whichever one has been last operated to throw the shuttle, will be forced outward toward the side of the loom till it passes its respective spring latch *g*, or *g′*, and will thus be caused to be secured while the lay moves backward.

O, is a bar secured to the front of the lay to keep the picker rods in place.

R, R′, are two short levers working each on a fulcrum pin *i*, secured in one side of the lay. The upper ends of these levers stand in front of the extremities of the latch spring M, and the lower ends are bent laterally that they may occupy positions in front of two bars S, S′, which are supported partly by two rods T, T′, which swing from pins *v*, in the side frames of the loom and partly by two springs U, U′, attached to the side frames, the said bars S, S′, being secured to the springs U, U, and being arranged in front of two similar cams V, V′, of nearly elliptical form, on the shaft D, said cams being set at right angles to each other, so that when the major axis of one is presented toward its respective bar S, or S′, the minor axis of the other is presented to its respective bar. The lower ends of the levers R, R′, are each connected with the lay by a strap *t*, of leather or other material merely for the purpose of preventing the said lever tumbling over.

The operation of the invention is as follows: Every time the lay moves forward the

crossing of the sheds is effected by the action of the cams E, on the treadles produced by the pawls G, G′, and the picker rod K, or K′, which has last operated to throw the shuttle, is moved outward toward the side of the loom till it passes the edge of its respective spring latch *g*, or *g′*, so that on the retreat of the lay the pickers are both locked in the condition in which K, is represented in Fig. 2. When the lay moves back the lower ends of the two levers R, R, strike the ends of the bars S, S′, one of which having the major axis of its respective cam V, or V′, presented toward it, is prevented moving backward so causes the lower end of its respective lever to be arrested, while the lay continues to move back and hence the upper end of the said lever is made to press back the latch *g*, or *g′*, on that side of the loom and so liberate its respective picker rod and leave it under the influence of the spring L, which draws the said picker rod suddenly toward the center of the loom and so causes the shuttle to be thrown; the other lever R′, or R, being undisturbed by reason of the minor axis of its respective cam V, or V′, being presented toward its respective bar S, or S′, and allowing that bar to be moved back by pressure of the end of the lever, the spring of the latch being stronger than the spring U, or U′, which supports the back of the bar S, or S′. Each picker rod is operated in turn in this way, the major axis of the two cams being presented alternately to their respective bars S, S′, in the successive retreating movements of the lay.

I do not claim broadly effecting either the harness motion or the shuttle motion of a loom by the agency of mechanism deriving motion from the lay; but

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

Combining the cam shaft for operating the harness treadles with the lay by means of a wheel F, with teeth on each side, pawls G, G′, a lever H, and a rod J, the whole applied and operating substantially as herein described for the purpose herein specified.

J. J. KENDALL.

Witnesses:

C. W. McCord,

H. A. Shelton.