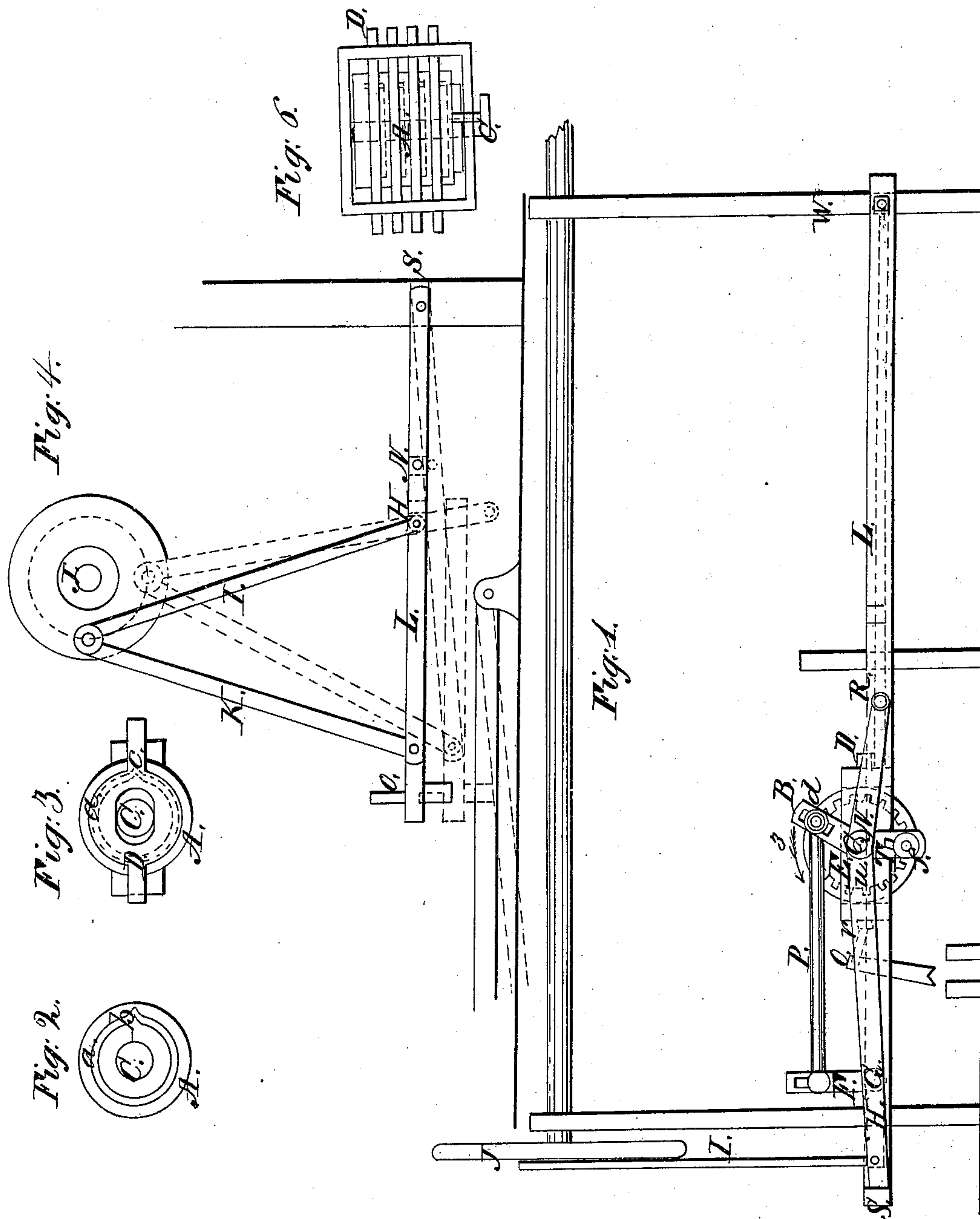


J. Shuttleworth. *Sheet 1-2 Sheets.*

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Patented Jan. 3, 1854.



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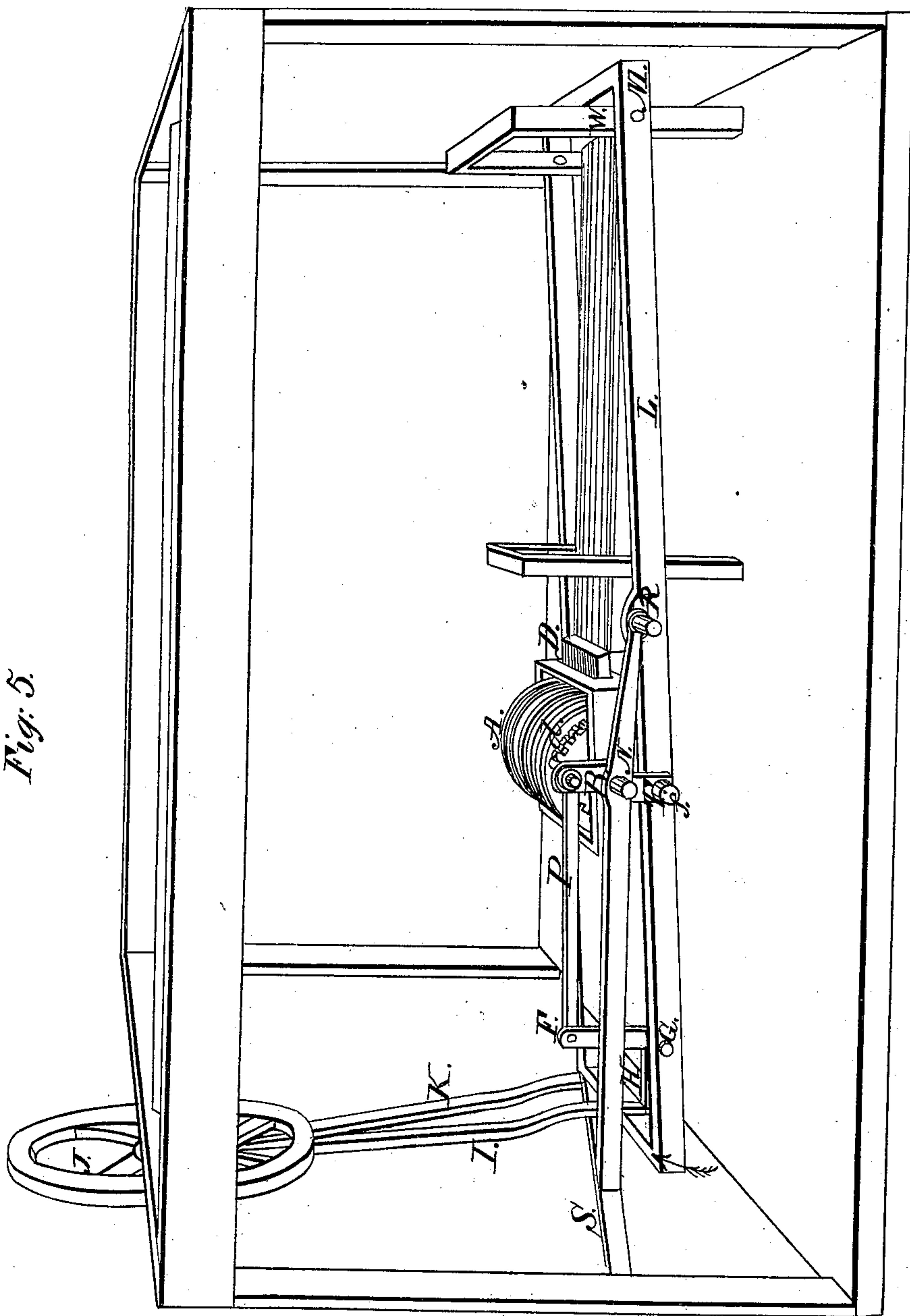


Fig: 5.

UNITED STATES PATENT OFFICE.

JOHN SHUTTLEWORTH, OF FRANKFORT, PENNSYLVANIA.

POWER-LOOM.

Specification of Letters Patent No. 10,382, dated January 3, 1854.

To all whom it may concern:

Be it known that I, JOHN SHUTTLEWORTH, of Frankfort, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Stop-Motions for Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation. Fig. 2 is a detached view of the disk showing the eccentric groove. Fig. 3 is a detached view of the vibrating bar or stop, in connection with the disk, groove, &c. Fig. 4 is a detached end view showing the arrangement and operation of the levers. Fig. 5 is a perspective view. Fig. 6 is a detached view of cylinder.

Like letters of reference refer to like parts in the different figures.

The nature of my invention consists in an arrangement of devices combined for the purpose of stopping the motion of a part of the treadles of power looms at intervals and then relieve them alternately relieving and stopping such different treadles as may be required in forming the different figures or designs which are to be formed in the web which said loom produces.

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

I construct a number of disks A, which are provided with a groove *a*, said groove forms an eccentric at any required point or points, as seen at *b*, Fig. 2. These disks are secured to an axis C. Between these disks I place sliding bars or stops D, which are made in the form seen in Fig. 3, said stop being provided with a pin *c*, which is secured to the bar D, in the horizontal plane passing through the axis C. This pin takes into the eccentric groove *a*, and the rotary motion of the disk gives a reciprocating motion to the bars D. The object of this motion is for the purpose of sliding the ends of said bars so that they will catch and arrest the action of the treadles at intervals and then release them. The number of eccentrics in groove *a*, may be increased to any desired number, thus giving bar D a corresponding number of reciprocating motions at each revolution of the disks A. These disks are all secured to one axle C, with the sliding bars D, placed between

them, as seen Fig. 5, and then the axle is placed in its bearing. These bearings are formed in a square frame M. See Fig. 5. The side of said frame is provided with apertures large enough to admit the ends of bars D through them and serve as guides, for the purpose of supporting said bars in a horizontal position. Frame M, is secured to a vibrating frame L, which is secured at one end to stationary frame work W. The other end is attached to a crank pin J formed on the axis of the driving wheel by means of a connecting rod K. Every revolution of the driving axle gives a vertical reciprocating motion to the frame L, in the direction of the arrow 2. I also attach another connecting rod *l*, to the crank pin J, which connects it with the end of the lever H. This lever is attached to a rocking shaft G. Said rocking shaft is provided with another arm or lever F, which stands in a perpendicular position. The rocking shaft G, is secured on the inside of frame L, and vibrates with it, and at the same time receives a rocking motion from the crank pin J, at every revolution of the driving wheel. Arm F, is connected to arm B by means of a connecting rod P. Arm B is connected to a rocking shaft U, similar to the one at G, but said rocking shaft is attached to a lever N. This lever is connected to the side of frame L at R, so that it will move freely. The other end is attached to bar S at N, Fig. 4. One end of bar S is attached to the stationary frame work of the loom, and the other end is attached to the end of frame L, as seen Fig. 5. Arm B is provided with a small projection *d*. This projection runs at right angles to arm B, and extends over the cog wheel E that is formed on the axis C, directly under arm B. There is another arm T, of the same length as arm B. This arm is made stationary on lever N, and is provided with a projection *f*, similar to the one on arm B at *d*. The axis of the rocking shaft U, is in a line with the axis of the wheel E. Lever N, being secured near the center of the vibrating frame L, and the vibrating bar S, it receives a similar vibrating motion from them, but said lever does not pass through as much space at the point where arms B and T are secured to it as frame L does at a point in line of axis C and U, and projections *d* and *f*, are just far enough apart so that one of them will take into the teeth on wheel E just as said wheel

reaches the extreme point of its vibration in either direction, that is when the wheel is down as far as the frame will allow it to go then projection *f* takes into the wheel and
 5 secures it in a stationary position until after the wheel is elevated high enough to relieve the wheel from the projection *f*. Then it comes in contact with the projection *d*.
 10 Said projection then takes into the teeth, and then the crank pin J, operates upon the rocking shaft G and arms F and B and serves to draw the end of arm B in the direction of arrow 3. This serves to turn the wheel E in the same direction. The slight
 15 vibrating motion of lever N, enables the projections *d* and *f* to retain their hold on the wheel longer than they would were each of these arms B and F confined in a stationary position. This action of arm B on wheel E,
 20 gives an intermittent rotary motion to wheel E and to the disks A, which are all connected to the same axis. This motion is the one required for the purpose of operating upon the stops D. Exactly at the time when the
 25 treadle is about being elevated the disks force out the stop and then said disks remain stationary until wheel E is again operated upon by the arm, as before described.

I also attach a picking apparatus to one
 30 of the stops, as seen Fig. 1. O is a bar which is secured to a frame L so that it will oscillate freely. The upper end of the bar O is connected to the end of one of the stops by means of a rod as seen in dotted
 35 lines at V. The sliding motion of the stop gives an oscillating motion to the bar O, and as said bar is attached to the frame L

it vibrates with it. The said bar O receives two motions. One is an oscillating motion, and the other is a reciprocating motion. 40
 The oscillating motion serves to change the lower end of the bar to a position so that it will alternately strike first one and then the other of the treadles, and the reciprocating motion of said bar serves to force down one 45
 of the treadles and then relieve it and operate upon the other.

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

1. I claim the connecting rod 1, and lever 50
 H in combination with the reciprocating frame L for the purpose of giving a reciprocating motion and a rocking motion to the shaft G.

2. I claim the rocking shaft G, arm F, the 55
 vibrating lever N, and arms B and T, in combination with the reciprocating frame L, for the purpose of giving an intermittent rotary motion to the wheel E and disks A.

3. I claim the disks A, constructed as de- 60
 scribed, in combination with the horizontal sliding stops D, for the purpose of forcing out and drawing in said stops in the manner described, and also for the purpose of operating the picker bar O substantially as 65
 described.

In testimony whereof I have hereunto signed my name and affixed my seal before two subscribing witnesses.

JOHN SHUTTLEWORTH. [L. s.]

Witnesses:

JOHN L. SMITH,
 H. F. WILLSON.