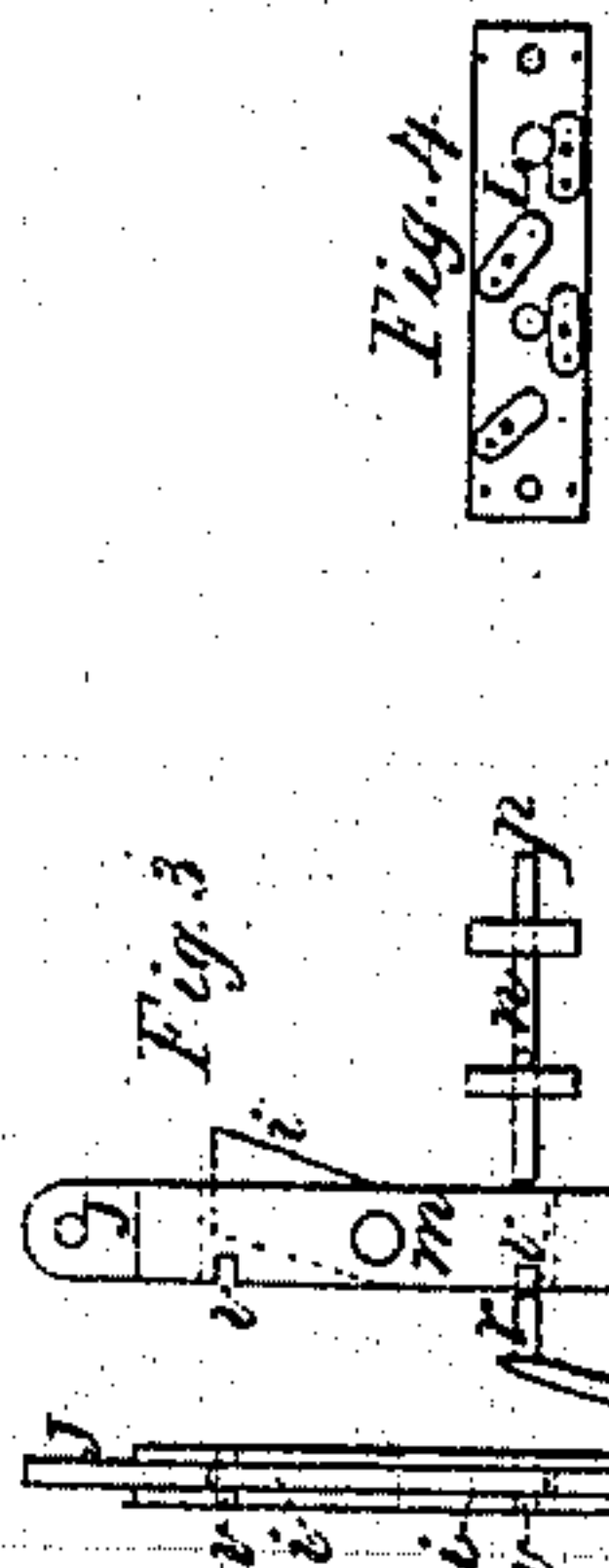
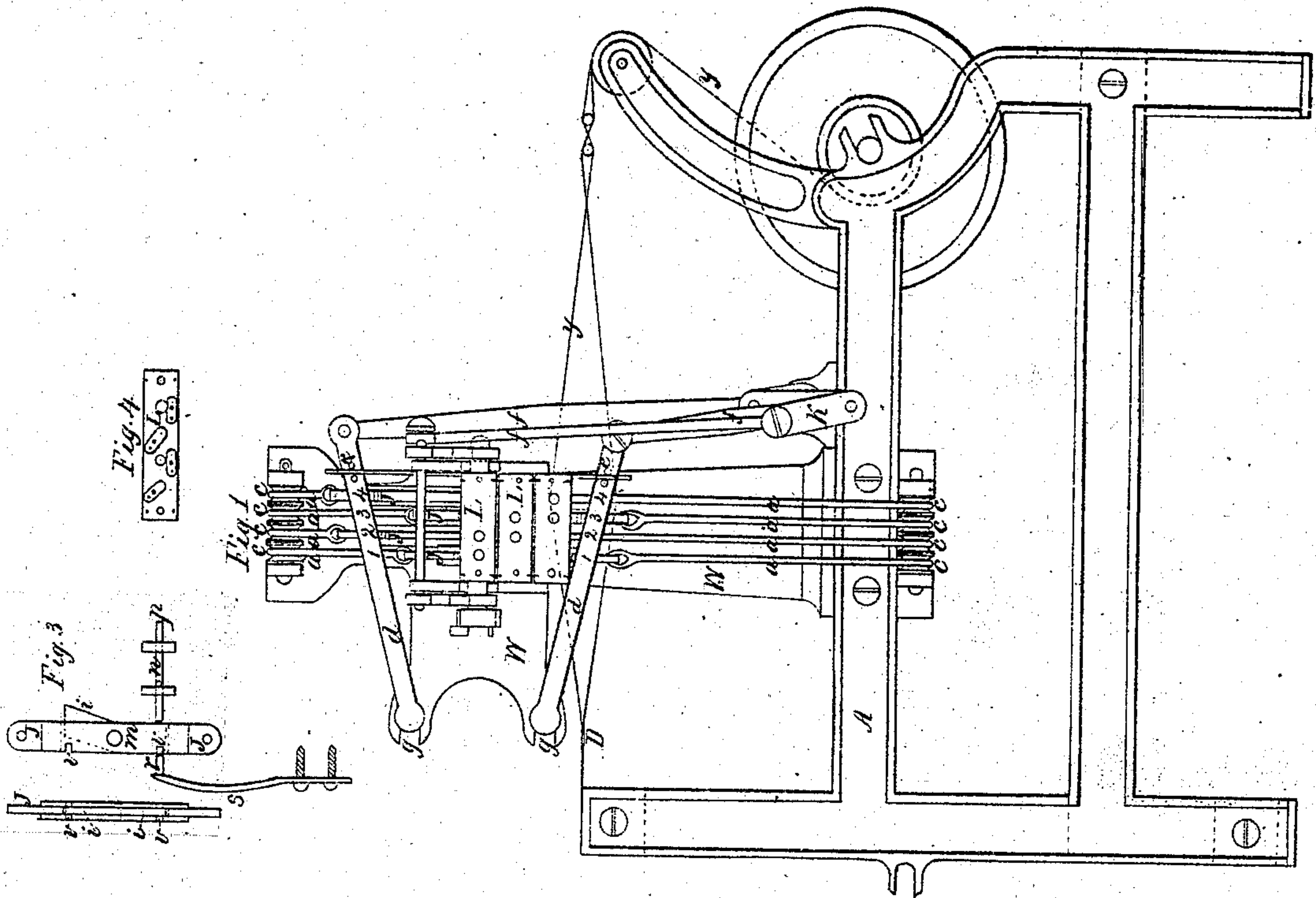


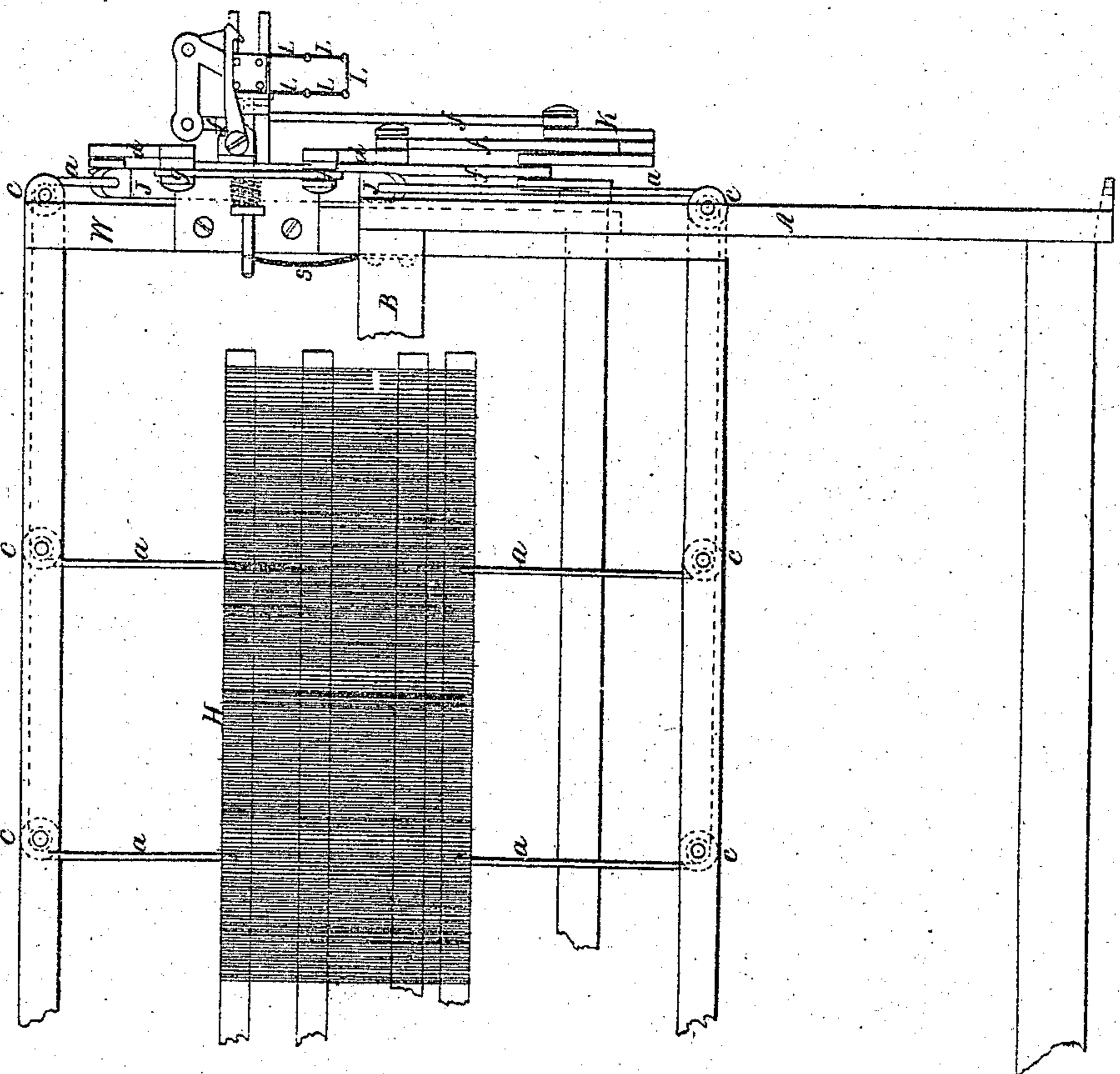
*J. Shinn.*  
*Loom.*

32,236.

*Patented Apr. 30, 1861.*



*Fig. 2.*



*Witnesses,*  
*John T. Beaumont,*  
*James H. Scott.*

*Inventor,*  
*John Shinn.*



# UNITED STATES PATENT OFFICE.

JOHN SHINN, OF LEVERINGTON, PENNSYLVANIA, ASSIGNOR TO HIMSELF, AND BARTON H. JENKS, OF BRIDEBURG, PENNSYLVANIA.

## LOOM.

Specification forming part of Letters Patent No. 32,236, dated April 30, 1861; Reissued December 29, 1868, No. 3,246.

*To all whom it may concern:*

Be it known that I, JOHN SHINN, of Leverington, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Power-Looms for Weaving Plain or Fancy Twills; and I do hereby declare that the following is a full, clear and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a view of the end of the loom having the harness motion attached to it, Fig. 2 is a view of the front of the loom, Fig. 3 is a view of the jacks and the parts connected to show the method of operating the same, Fig. 4 is a view of one of the lags or a section of the pattern chain, showing the method of covering the holes.

Similar letters in the figures represent the same parts.

The nature of my invention consists in the method of opening or raising and depressing the harness and retaining them open as long as may be desirable, also the method of relieving the jacks, that they may be raised and depressed and held in position as long as may be desirable, the whole being under the control of the pattern chain.

In referring to my drawings many parts are represented that are old and well known. In referring to these parts, I shall only mention them when it is necessary to explain them in connection with my improvements.

To enable those skilled in the art to make and operate my improvements, I will now proceed to describe their construction and operation, reference being had to the drawings.

A represents the ordinary loom frame having an upright marked W, which may be firmly fastened to the frame by means of bolts (or cast to the frame forming a part of the frame or end). To this upright I have attached the arrangement for operating the harness *d, d*. In Figs. 1 and 2 are the lifter and depressor, having one end working freely in the slots *g, g*. The other ends are connected to the double crank *k* by means of the connections *f, f*, which give them a closing and opening movement. At the parts marked *e, e*, they are guided by pins to cause them to move in a vertical line.

The slots *g, g*, supporting the ends of the lifters and depressor are carried sufficiently forward so that their centers will be at the cloth making line (marked D, Fig. 1,) and at such a distance from each other that the lifter and depressor will rise and fall an equal distance from the center of the stud or pin on which they are hung in the slots *g, g*. By this arrangement the lifter and depressor will have an equal movement at the points marked *l, l*, and sufficient to raise or depress the heddles connected to that jack, which is increased from 1 to 4, as shown in the drawing, (or as many as it may be desirable to operate, by increasing the length of the lifter and depressor and increasing the stroke of the crank).

J, J, J, J, are the jacks which are connected to the heddles by the cords *a, a, a, a*, passing over the pulleys *c, c, c, c*.

The method of constructing the jacks may be plainly seen in Fig. 3. *i* is a blade set in the central part of the jack and hung on the center pin *m*, on which it freely works. On the back of the jack there are two notches, *v, v*, at equal distances from the center *m*. The notches are at such a distance apart as is required for the movement of the heddle to which the jack is attached (it being understood the greater the distance of the heddle from the front of the loom the greater the distance the jack will be required to move in order to bring the warp ends all in an even plane in the front part of the shade.) In Fig. 3 *n* is the needle, which is allowed to move freely through the guides or supports, 1, 2. In Fig. 3, it will be seen that the blade *i* at the upper part of the jack is out and the lower part is closed even with the edge. The depressor, *d*, will now catch the blade, *i*, and press it down and the lifter will pass the lower part of the blade, it being closed, as shown in the drawing. It will be seen by reference to the drawing that the blade, *i*, is inclined from the center to the end when either end is out and as the jack moves either up or down the blade acts as an inclined plane and will force the needle *n* out and at the same time the blade being out at that end it will allow the pin *r* fastened to the spring, *s* to drop into the notch *v* in the jack and thereby firmly hold it (the jack) and heddle in that position till changed by the pattern on the chain L, L, L. The springs, *s, s, s, s*,



are fastened to the upright by screws as shown by the dotted lines in Fig. 2.

By covering the hole in the lag, L, (on the pattern chain) it will press the needle at 5 p and force the blade, i, in and the pin, r, out, thereby throwing out the opposite end of the blade, i, as seen in the drawing, which is caught by the lifter or depressor and thereby lifting or depressing the jack as the 10 case may require. Should the hole in the lag be left open the needle will pass through the lag and the jack will remain in that position till the movement of the pattern chain presents a lag having the hole covered.

15 The pattern chain used on this machine is similar to that used on the jacquard machine excepting the cards (or lags as they are called on machine looms) which I make of heavy tin having a hole for each needle 20 which holes are covered with small plates as shown in Fig. 4 marked o, o, o, o, which can be moved over or off the holes as may be necessary to produce the pattern designed to be woven.

25 The method of operating the chain is also similar to that of the jacquard machine except the movement (or motion) which is

communicated to the cylinder directly from the crank shaft.

I do not confine myself to the precise form 30 of the jacks; but

I claim—

1. Constructing each jack in such a manner that after having given a full movement to the heddle in either direction (up or 35 down) it will be held in that position independent of the others until relieved by the pattern cylinder or chain as above described.

2. Making the edges of the blades in the jacks inclined or beveled from the center out 40 to each end so that by pressing one end of the blade into the jack the other end (from the center out) will form an inclined plane and force the needle out to be ready for the next movement of the cylinder or chain. 45

In witness whereof I have hereunto subscribed my name this seventeenth day of January, one thousand eight hundred and sixty one.

JOHN SHINN.

In presence of—

JOH. L. BEAUMONT,  
JAMES H. SCOTT.