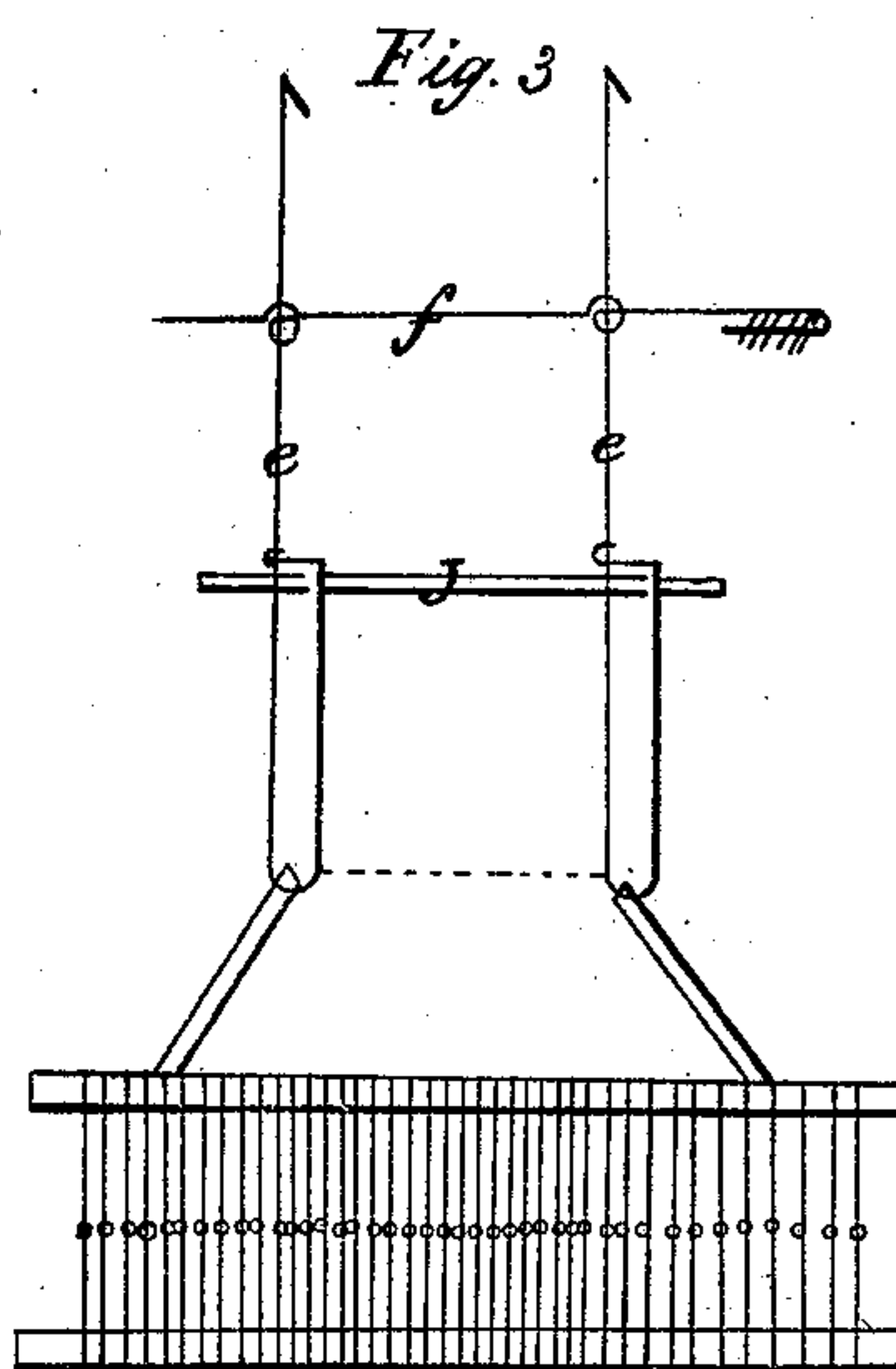
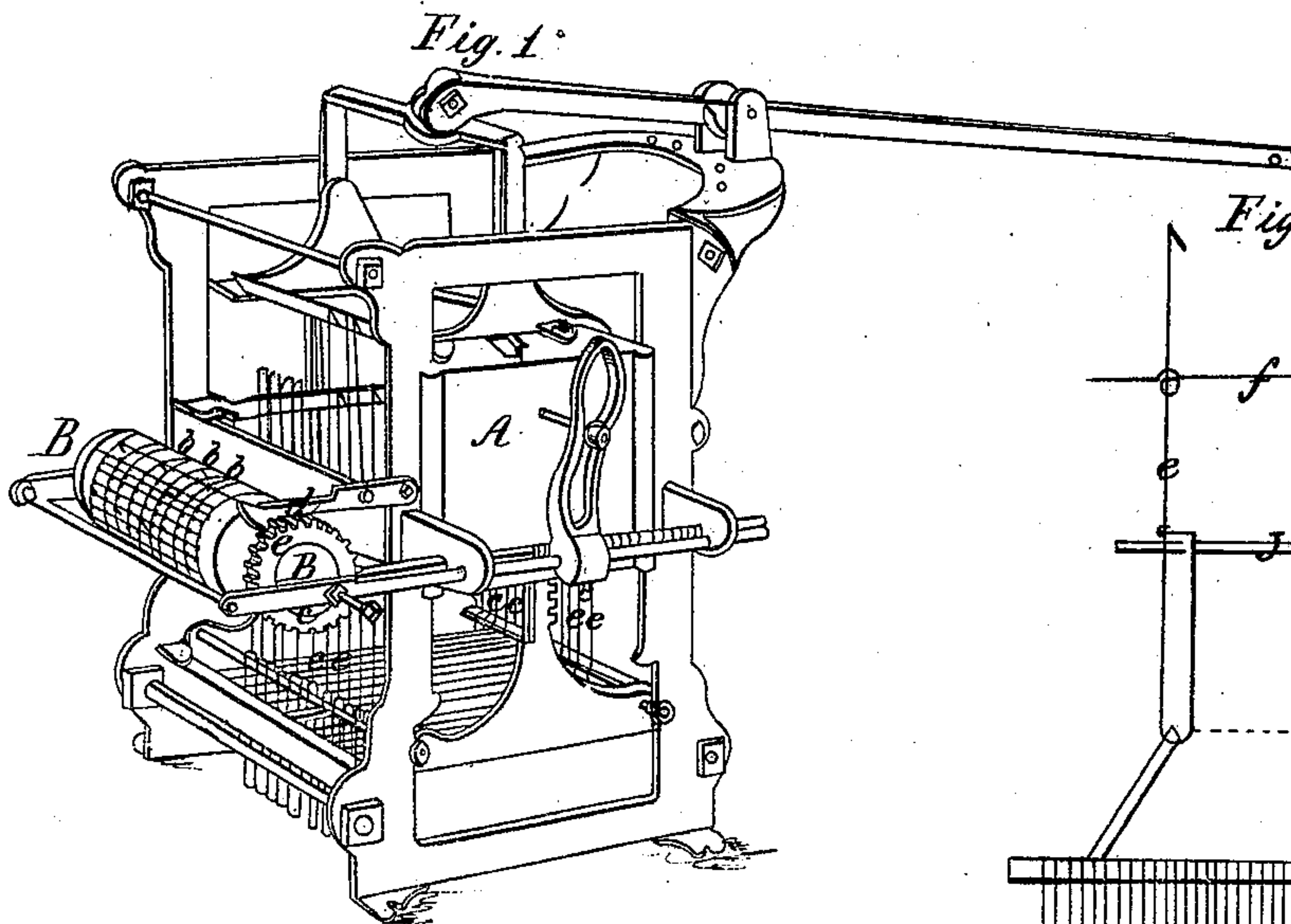
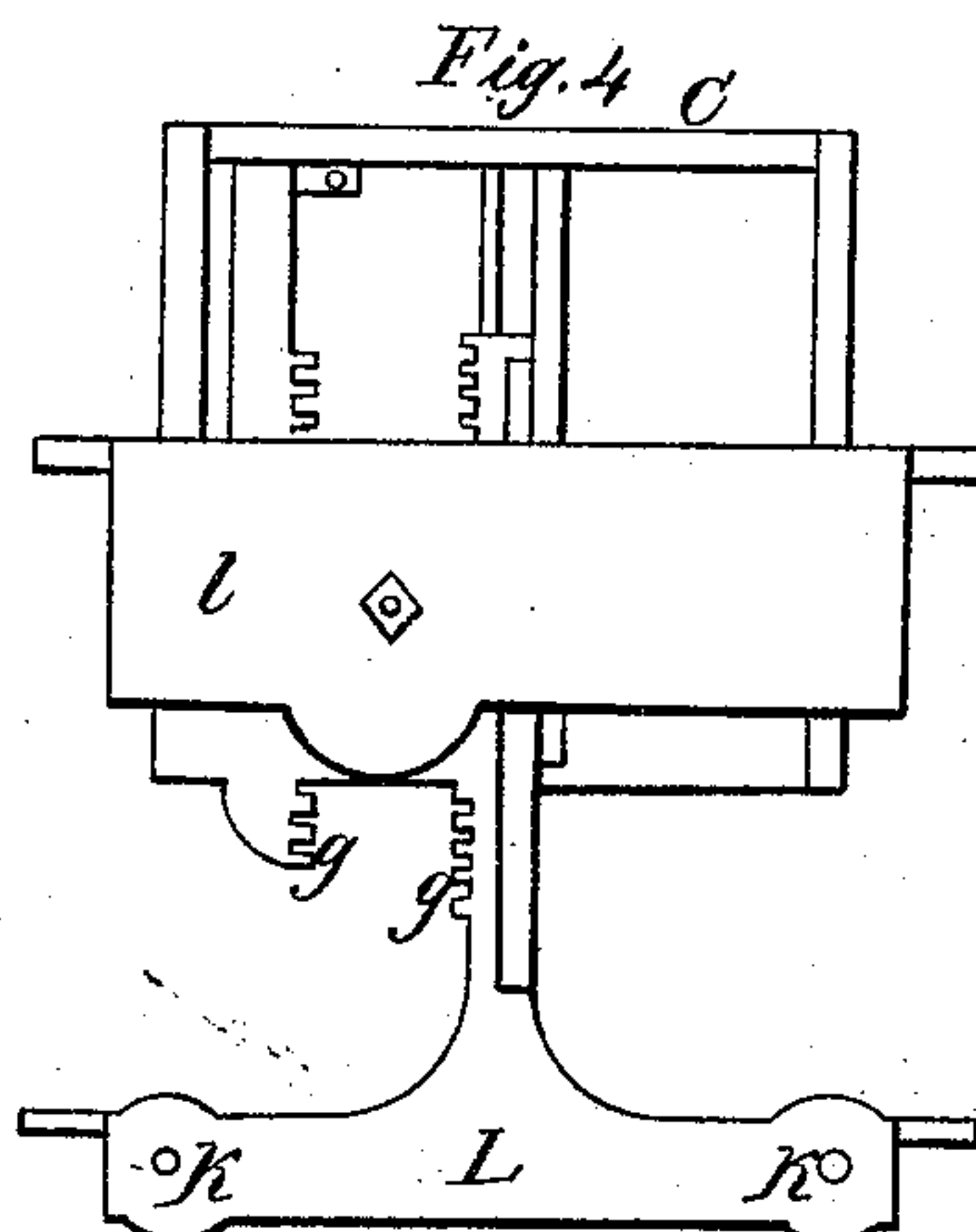
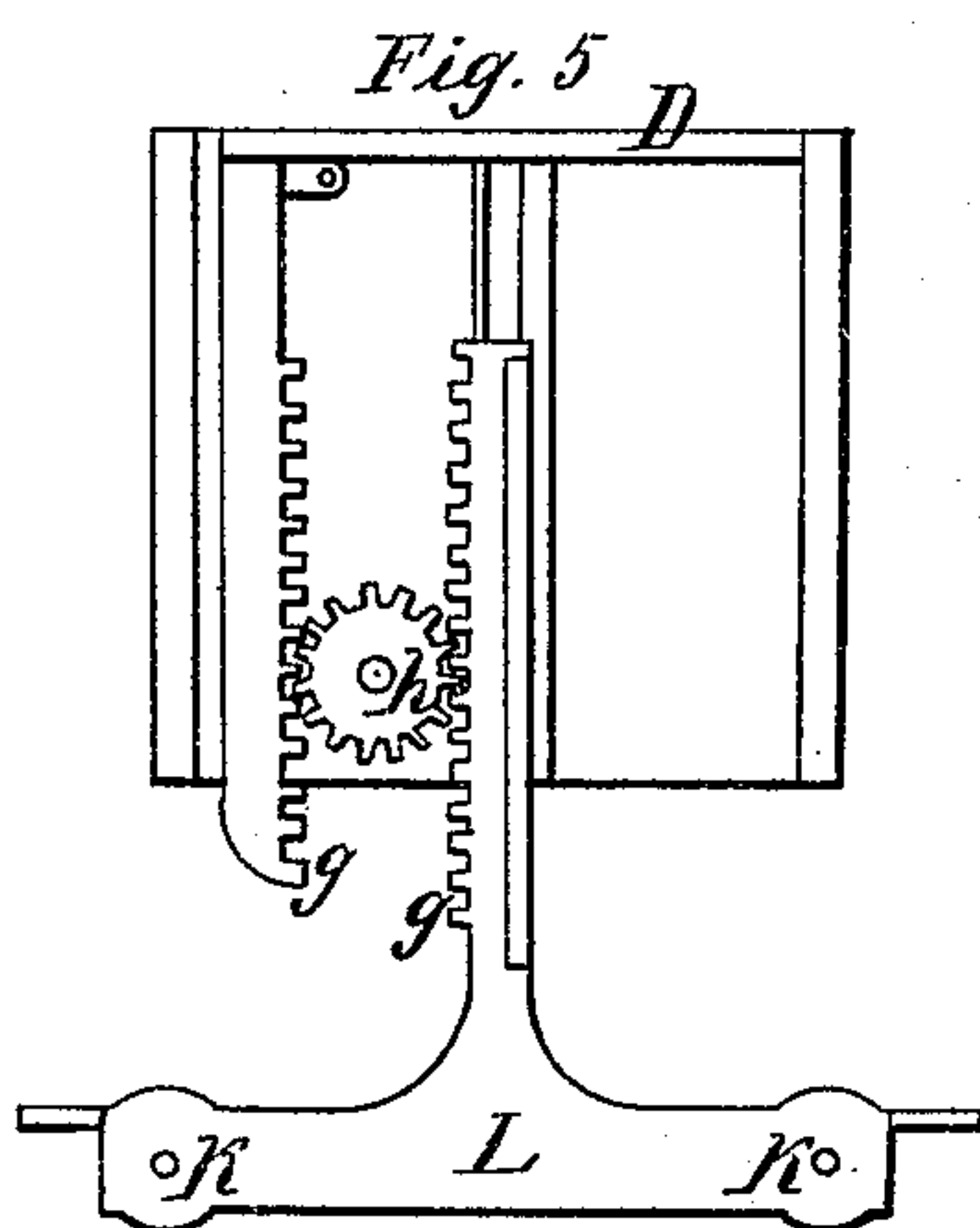
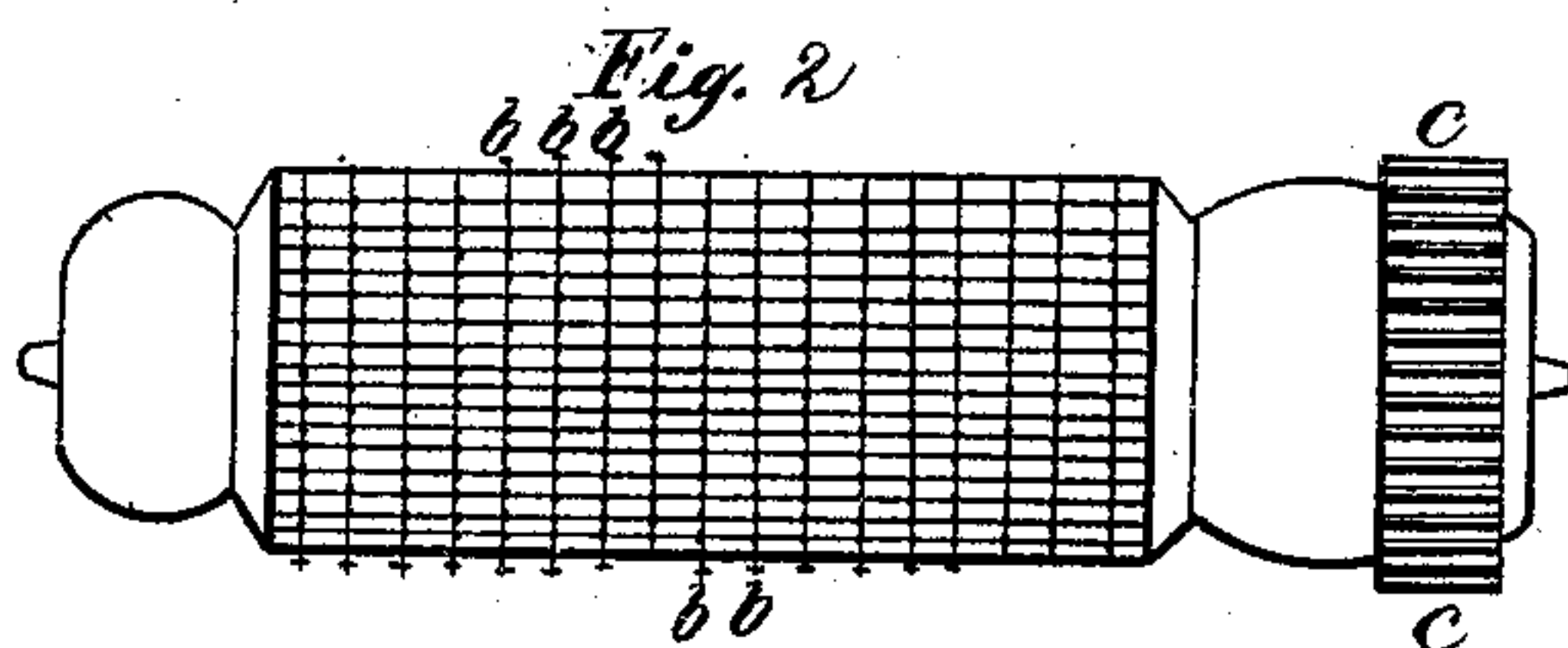


H. Kelly.
Jacquard Motion for Loom.

N^o 5,937.

Patented Nov. 28, 1848.



UNITED STATES PATENT OFFICE.

HENRY KELLY, OF THE BOROUGH OF MANAYUNK, PHILADELPHIA COUNTY, PENNSYLVANIA.

JACQUARD.

Specification of Letters Patent No. 5,937, dated November 28, 1848.

To all whom it may concern:

Be it known that I, HENRY KELLY, of the borough of Manayunk, in the county of Philadelphia and State of Pennsylvania, have invented new and use Improvements in Jacquard-Machines, so as to weave figured or plain cloths or other woven fabrics thereby without a square axis (usually termed "cylinder") or pattern cards and so as to raise and sink or depress alternately the sheds of the warp equally, and thus to adapt the said machine better for power-loom than it heretofore has been; and I do hereby declare that the following is a full and exact description of the said improvements, reference being made to the annexed drawings and index thereof, as part of this specification.

In lieu of the square or four faced cylinder, with its four-cogged wheel and pattern cards thereon, (as heretofore used in the said machine) I place a round cylinder (B Figures 1 and 2) into the periphery or surface whereof I bore, in straight lines lengthwise of the cylinder, any requisite number of small holes into which I fasten pins (by screws cut into them or otherwise and common screw nails for fastening into wood will answer as these pins), so that in weaving, each pin in the row will push one of the needles of the machine in a direction from the cylinder. These needles I arrange so that their ends form one straight row or file parallel with the cylinder; and in each needle are two holes or eyes through each of which passes one of the upright hooks. To the lower ends of the two hooks passing through the same needle a shaft or heald is attached by its ends, and the needle, being pushed by one of said pins, causes the shaft to be moved evenly up or down by this pair of hooks, and so on with every needle that may be required to form the desired figure in the web. The pins are intended, the same as the holes in the pattern cards, to form the figure sought to be woven; and may be carried in the cylinder so as to produce the same effect as the pattern cards heretofore cut through the cards; but not liable to be displaced, by rapid motion, as cards are. On the end of the cylinder I fix a cogged wheel (*c c* Figs. 1 and 2) in the teeth or cogs of which the catch (*d* Fig. 1) works; and when the sliding or lifting frame (A Fig. 1 sometimes called the griff frame) is moved upward, the cylinder is moved around

by the said catch the distance of one tooth or cog; the number of teeth or cogs in the wheel, is equal to the number of rows of pins in the cylinder, and is equal in effect to the same number of treadles in a common loom; because every tooth of the wheel that is thus moved causes so many shafts or healds, as the figure may require, to be acted on in order to draw the lower shed of the warp down as far as the upper shed is raised; and thereby preserve the tension of the warp as equal as possible. I place a pair of racks (*g g* Figs. 4 and 5) in each end of the sliding frame or griff, with their teeth toward each other; one of each pair of those racks is fastened to and moves up and down with the sliding frame the other of each pair of racks slides up and down in a groove; and between each pair of these racks I place a pinion (*h* Fig. 5), turning on a fixed central pivot, and its teeth or cogs working into those of both racks simultaneously. This pinion's center being immovable, it is turned partly around by the fixed rack as it rises and falls with the sliding frame or griff; and the pinion, by this movement, causes the opposite rack to move in its groove the same distance with the fixed rack, but in the opposite direction. The hooks that the woven figure requires to be raised are lifted by the lifting bars of the sliding frame or griff; and the rest of the hooks, being suspended on rods as (*J* Fig. 3) passing through the open slit in the lower end of each lifting hook, are at the same time depressed a distance equal to that which the former hooks are lifted. The ends of these rods are fastened in opposite holes (*K K* Figs. 4 and 5) in the cross bars (*L* Figs. 4 and 5) that is attached to the lower end of each sliding rack, and thus the sheds of the warp are kept equally stretched throughout.

This improved machine operates with unerring accuracy and any required speed; and a much better fabric is made of the same quality of yarn, and made much faster, with less expense and waste, and may be afforded much cheaper than if made by the machinery heretofore used, whether operated by manual labor or other motive power.

What I claim as my invention, and desire to secure by Letters Patent, is not the said cylinder or polygon, cogged wheel, racks, pinion, or any or all of them; but

What I so claim and wish so to secure is—
The combination, application and use of

the said round cylinder with pins or screws in its surface and cogged wheel on its end, (to operate in lieu of the four sided cylinder or axis and its four cogged wheel and
5 of the said cards) together with the combination, application and use of the said two pairs of racks, with a pinion working in and between the racks of each pair, all combined, applied, used, and adapted to the jacquard

machine, as described in the foregoing specification. 10

In testimony whereof I hereunto set my hand and affix my seal, this twenty-eighth day of September A. D. 1848.

HENRY KELLY. [L. s.]

Witnesses:

D. M. LAUGHLIN,
JON. COOK.