

J. F. Gebhart.
Loom Shedding.

N^o 66,827.

Patented Jul. 16, 1867.

Fig 1.

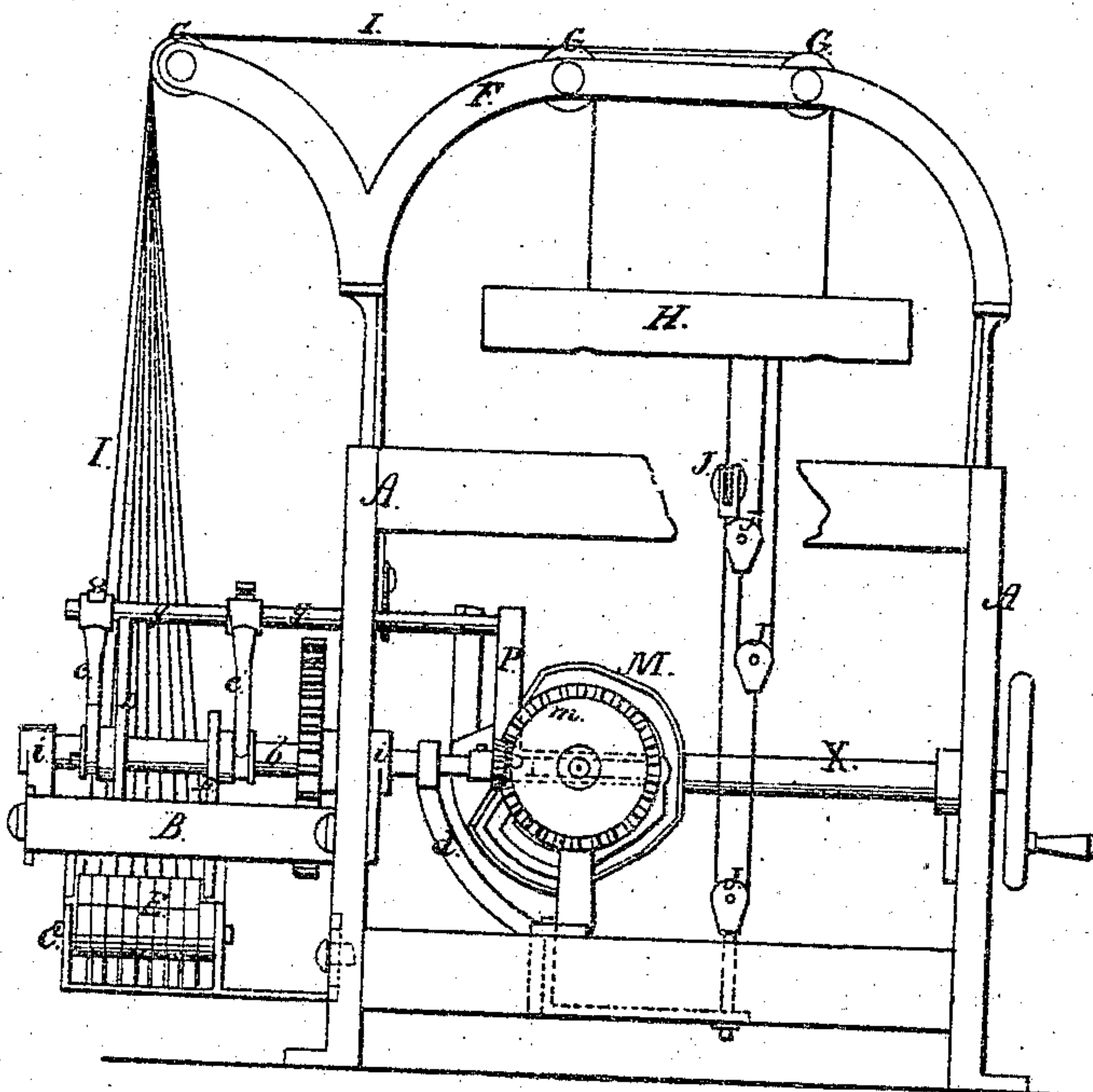


Fig 3.

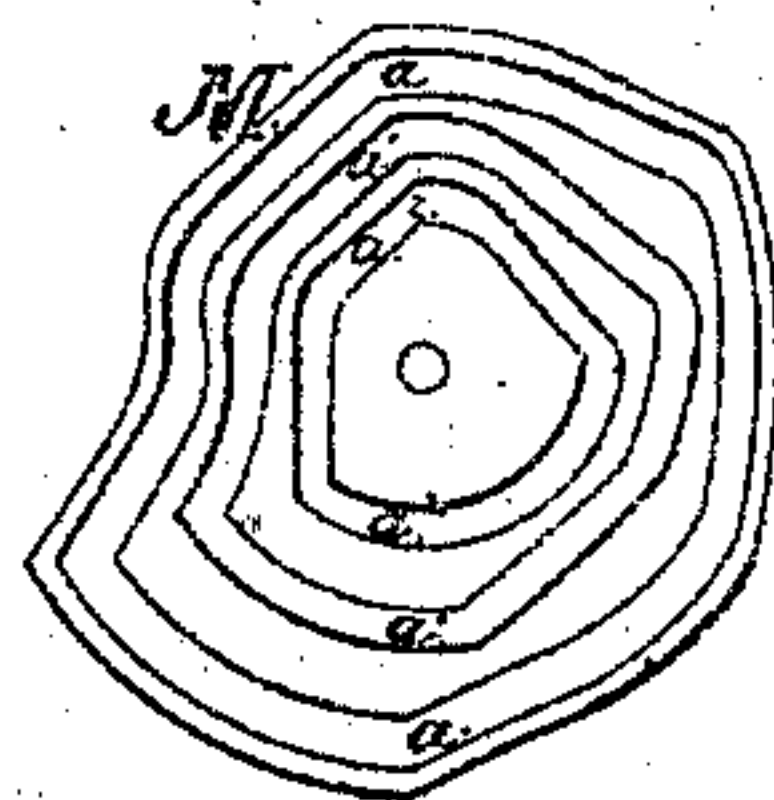
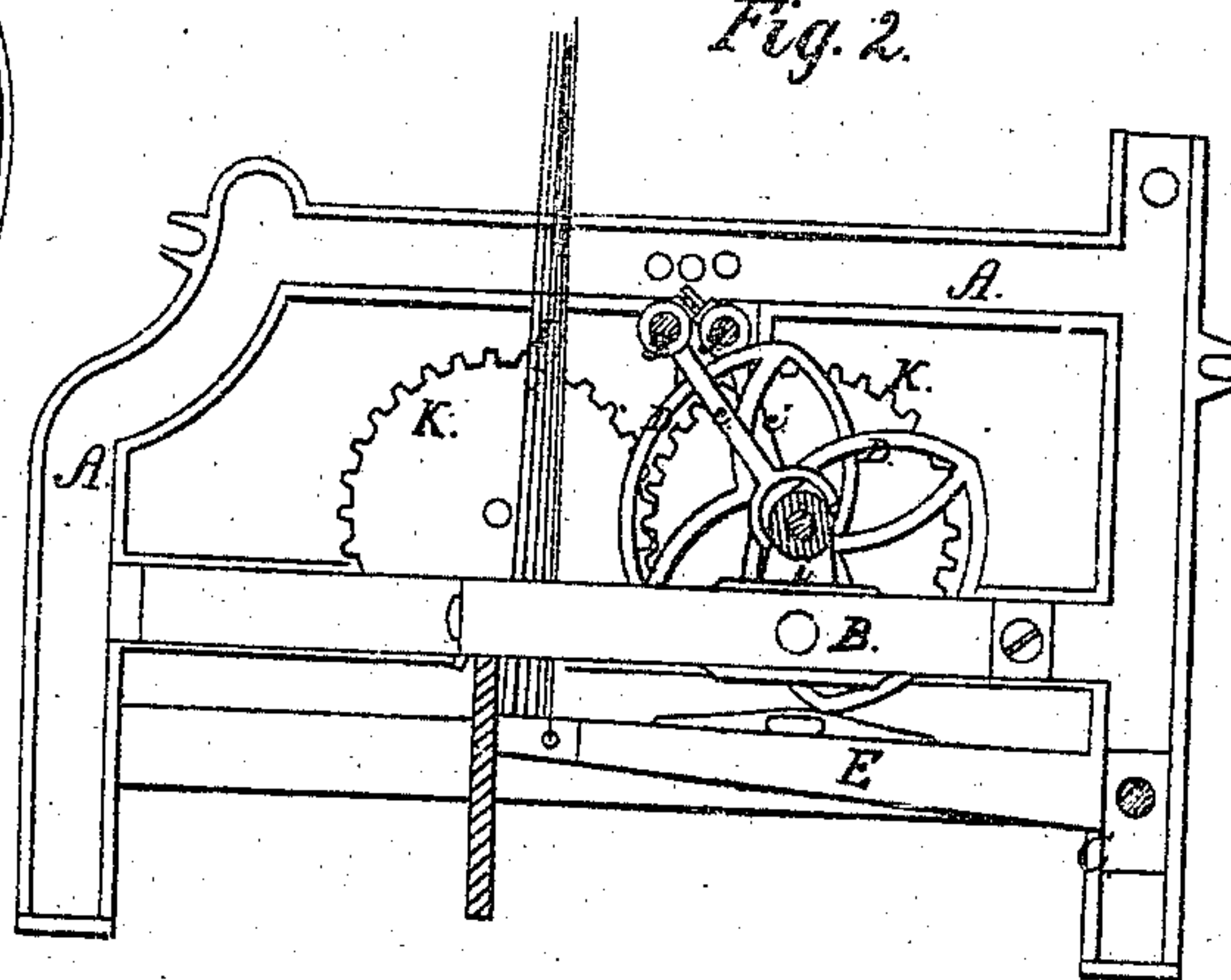


Fig. 2.



Witnesses,

Wm. W. W. W.
V D L. L. L.

United States Patent Office.

JOHN F. GEBHART, OF NEW ALBANY, INDIANA.

Letters Patent No. 66,827, dated July 16, 1867.

IMPROVEMENT IN HARNESS-MOTION FOR 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, JOHN F. GEBHART, of New Albany, in the county of Floyd, and in the State of Indiana, have invented certain new and useful Improvements in "Looms;" and 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, making a part of this specification.

Figure 1 represents a front elevation, and

Figure 2, an end view.

The nature of my invention consists in the changing of the treadles and cams from underneath to the end of the loom, and the addition of the necessary parts for operation in this manner, whereby leaf jeans or any other twilled goods are woven with the right instead of the wrong side up.

In the annexed drawings, A represents the frame of the loom, supported upon which, by means of suitable standards, is the horizontal sheave-frame F, provided with its sheaves G G G, over which the straps I I are passed. Connected to the main frame A, at its end, is the small frame B, which is provided with suitable bearings for supporting the cam-shaft *b*, beneath which the treadles E are placed on a stand, C. D D represent the cams, which are secured upon the shaft *b*, between the main frame and outer end of the small frame, in such a manner as to operate the treadles E. These cams and treadles are now used in most of the looms in operation, and are found upon the loom patented by Alfred Jenks. Extending from the ends of the treadles, up over the frame F and sheaves G, are the straps I, which are connected to the heddle-frames H. The heddle-frames are provided with straps at the lower ends, which pass over pulleys J J J, which pulleys are connected to the floor or to a suitable stand under the frames H. K K represent the gear-wheels, which transmit motion from the main shaft X to the cam-shaft *b*. It will be seen that one of the wheels K is upon this cam-shaft, and that the said shaft extends into the main frame A, having a small bevelled cog-wheel, *n*, on its inner end, which cog-wheel meshes into a larger-faced cog, *m*, upon the front end of a small shaft, *s*, which supports the worm-cam M. In Figure 3 a side view of this worm-cam M is shown, with its grooves, *a a' a''*, and form of construction. This cam is made in a double form, having the grooves herein shown on both faces, and can be cast in one or two parts. *g g* represent two small shafts, which extend from the inside of frame A to the outer frame B, where they are provided with the usual form of clutch-forks *e e'*, which encircle the collars upon the outer and inner cams D D, and slide the said cams back and forth upon the treadles. The cams D have small grooves under their collars, which rest over a rib upon the cam-shaft, and by which means the cams are prevented from turning. These cams being placed with their faces opposite each other, are intended to press upon the treadles at different times, to give the required motion to the heddle-frames. Upon the inner ends of each shaft *g* is an L-shaped bar, P, with an oblong slot, (see dotted lines, fig. 1,) through which passes the small shaft *s*. These bars P have small pins (not shown) on their ends, which fit into the grooves desired on the faces of the worm-cam M, and which operate the shafts *g g* and the treadles E by the cams D D. *i i'* represent bearings to support the shaft *b*, and *d* a brace for the inner end.

Whenever it is desired to weave five-leaf twilled cloth, (as the accompanying drawings represent this loom,) it is necessary to have four of the five heddle-frames H to work down, and one to work upwards, successively. When the treadles are under the loom there is a strap to connect each treadle with each heddle-frame, and as only one treadle can be pressed down at the same time, but one heddle-frame is drawn down and four lifted up. In the improvement herein set forth, where the treadles are placed at the end of the loom, (and running the straps I up and to the top of the treadle-frames) when the treadle is pressed down, it draws up one of the frames and leaves down four, they being held down by the pulleys J J J, instead of being held up, as in the ordinary looms. Thus it will be seen that the placing of the treadles on the end of the loom, the action is reversed from the above-mentioned looms, and the right side of the goods woven upwards. In a loom weaving the right side of the goods up, the operator can at once discern any fault, and stop the operation immediately, for correcting it. In weaving, there is only one-fourth as many threads on the right side in warp, and should a thread break, it leaves four times as large a space on the right as it does on the wrong side, and being thus conspicuous, the operator can at once discover it. This improvement may be put into an ordinary loom (that

weaves no more than four-leaf, and wrong side up,) thereby changing it into a loom which will weave the right side up, and two, three, four, five, six, eight, and ten-leaf, without any extra castings of consequence. The changes in the number of leaves are effected by changing the pins in the bars P from one groove to the other.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The frame F, with sheaves G G G, for carrying the straps from the end of the loom to the heddle-frames, when said frames are connected to the under part of the looms by straps and pulleys J J J, for the purpose specified.
2. The combined worm-cam M, placed under the heddle-frames H, into which are placed the pins on the bars P, for shifting the shafts *g g*, with clutches *e e'*, in the manner and for the purposes set forth.
3. The arrangement of the shaft *δ*, provided with sliding-cams D D, cog K, and cog *n*, with the driving-shaft X and its gear, and the treadles E, for the purposes specified.
4. The combination and arrangement of the frame B upon the end of the loom-frame A, for supporting the cam-shaft and cams to operate the treadles, when said treadles are secured upon the stand C, and connected to the straps which pass over the frame F and connect the heddle-frames H with straps and pulleys J, in the manner and for the purposes set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 19th day of March, 1867.

J. F. GEBHART.

Witnesses:

JACOB ANTHONY,
N. H. COBB.