

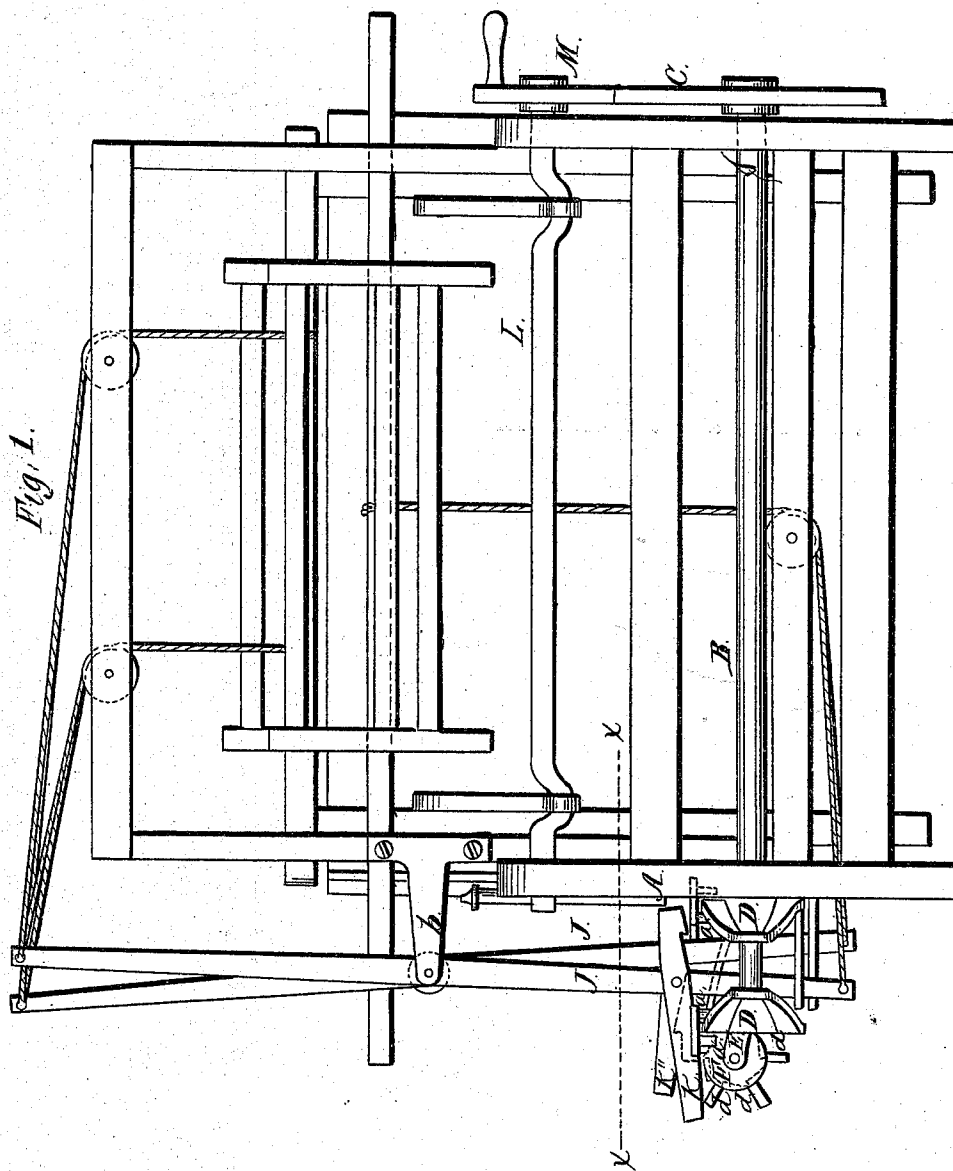
A. F. Gibboney.

Sheet 1, 2 Sheets

Loom.

No 95,221.

Patented Sept 28, 1869.



Witnesses:

G. H. Smith,
J. C. Theaker

Inventor:

A. F. Gibboney
J. C. Theaker
att'y

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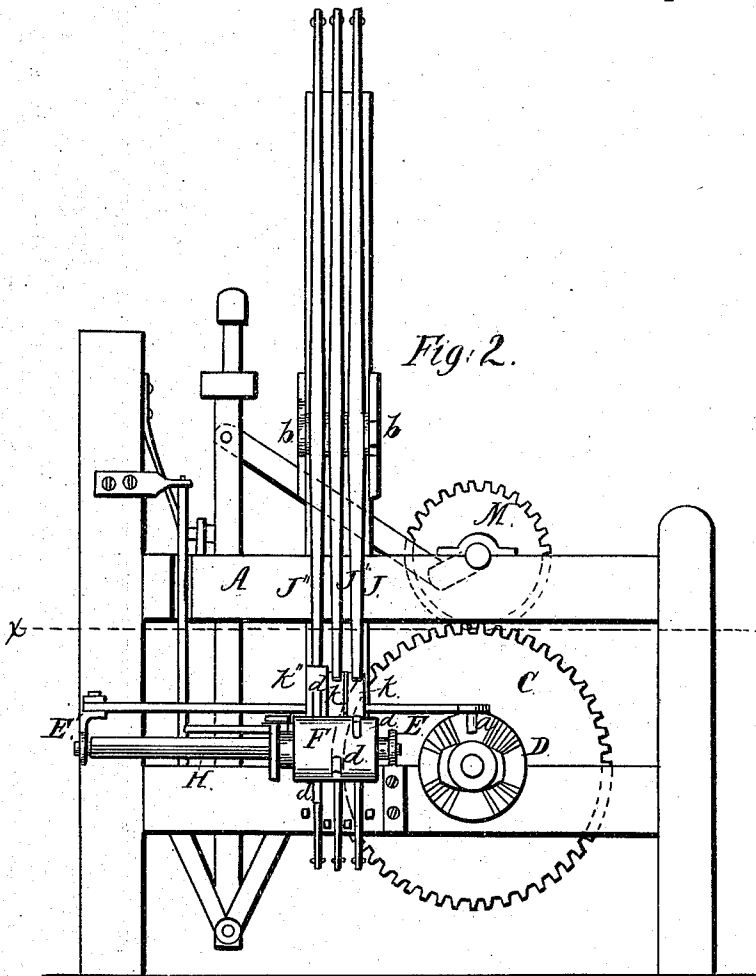
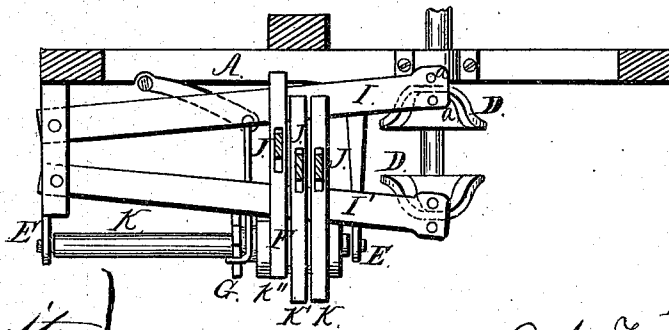


Fig. 3.



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United States Patent Office.

A. F. GIBBONEY, OF BELLEVILLE, PENNSYLVANIA.

Letters Patent No. 95,221, dated September 28, 1869.

IMPROVEMENT IN HARNESS-MECHANISM 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, A. F. GIBBONEY, of Belleville, in the county of Mifflin, and State of Pennsylvania, have invented a new and useful Improvement in 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 making a part of this specification, in which—

Figure 1 is a front elevation.

Figure 2 is an end elevation.

Figure 3 is a horizontal section, taken in the lines *x x* of figs. 1 and 2.

The nature of my invention consists of a peculiar and simple arrangement of cams and levers by which the harness-frames, which weave various figures, patterns, twills, &c., are operated.

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

The harness-frames are placed in the frame A in the usual manner.

B represents the cam-shaft, on one end of which is a cog-wheel, C, and on the other end are cams D D.

To the end of the frame A are attached supports E E.

Between these supports is located the pattern-wheel F, at one end of which is a ratchet-wheel, G.

The pattern-wheel F is on a shaft, H, whose bearings are the supports E E.

On the pattern-wheel are placed any desired number of pins, *d*.

Above the cams D are placed two horizontal reciprocating-levers I I', one end of each of which is pivoted to the support E, and the other rests upon the cams D.

In the ends of these levers are pins *a*, one being placed on each side of the cams, by which means the levers I I' are operated.

Between the levers I I' are placed the treadle-levers J J' J'', which are pivoted, at or near their centres, to brackets *b b*, which are secured to the harness-frames.

Across and above the levers I I' are latches K K' K'', in which are slots, through which pass the treadle-levers J J' J''.

These are held together by pins *c*, which pass through the latches K K' K'' and treadle-levers J J' J''.

The pattern-wheel F is operated by the movement of the lay.

The lay is worked by the crank-shaft L, on the end of which is a cog-wheel, M, which meshes into the cog-wheel *c*.

Its operation is as follows:

Power is applied to the cog-wheel M, and from it to

the wheel *c* on the cam-shaft B, which operates the cams D D.

The effect of the revolutions of the cams is to open and close the levers I I', which operate the treadle-levers J J' J'' through the latches K K' K''.

The harness-frames are connected to the treadle-levers J J' J'' in the usual manner.

By the movement of the lay, the pawl works the ratchet-wheel G on the end of the pattern-wheel F.

On the pattern-wheel F are arranged pins *d*, at proper positions, and as the wheel F revolves, the pins *d* strike against the under side of the latches K K' K'', and one or more are raised, the number raised depending upon the arrangement and number of the pins on the pattern-wheel F.

To describe the operation of the levers I I', latches K K' K'', and treadle-levers J J' J'', we commence with the parts in their positions, shown in the drawings.

The positions of the cams D are such that the levers I I' are open to their full extent.

As the cams revolve, the levers I I' are drawn together, the lever I', in its backward movement, drawing with it the latches K and K', and the two treadle-levers J J', which raise the harness-frames, attached to each, at the same time (the latch K'' being held up by one of the pins *a* on the pattern-wheel F, and its rear end being engaged with the lever I) the latch K'' is drawn forward by the forward movement of the lever I, and, by its movement, changes the position of the treadle-lever J, draws down the harness-frame attached to it.

In this manner, the position of the harness-frames are continually changing in accordance with the arrangement of the pattern-wheel, by which motion the lifting, holding open, depressing, and evening the harness, at the proper time and place, are accomplished.

This arrangement gives the back harness the desired additional motion over those of the front.

Each time the pattern-wheel moves, some of the latches are raised by the pins on it, and others fall as the pins move from under them, their own weight causing them to drop.

Having thus fully described my invention,

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

The levers J J', double latches K K', pattern-cylinder F, horizontal levers I I', cams D D, and shaft B, all constructed and arranged as and for the purpose specified.

A. F. GIBBONEY.

Witnesses:

G. A. C. SMITH,
J. G. THEAKER.