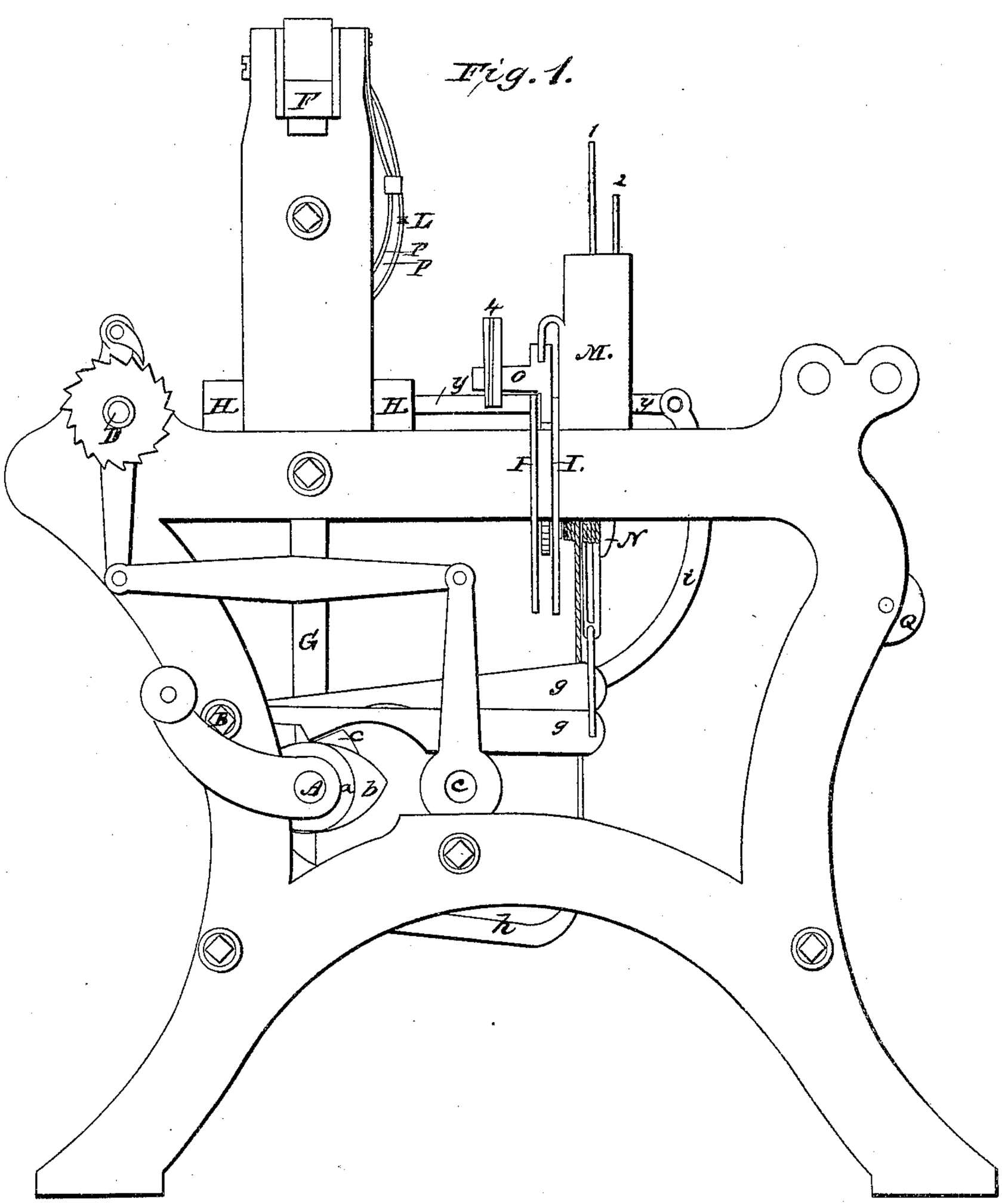
Sheet 1 - 3 Sheets.

K. Vogel.

Loom Shedding.

No. 10,173. Patented Oct. 25, 1853.

Fig. 1.



Sheet 2 - 3 Sheets.

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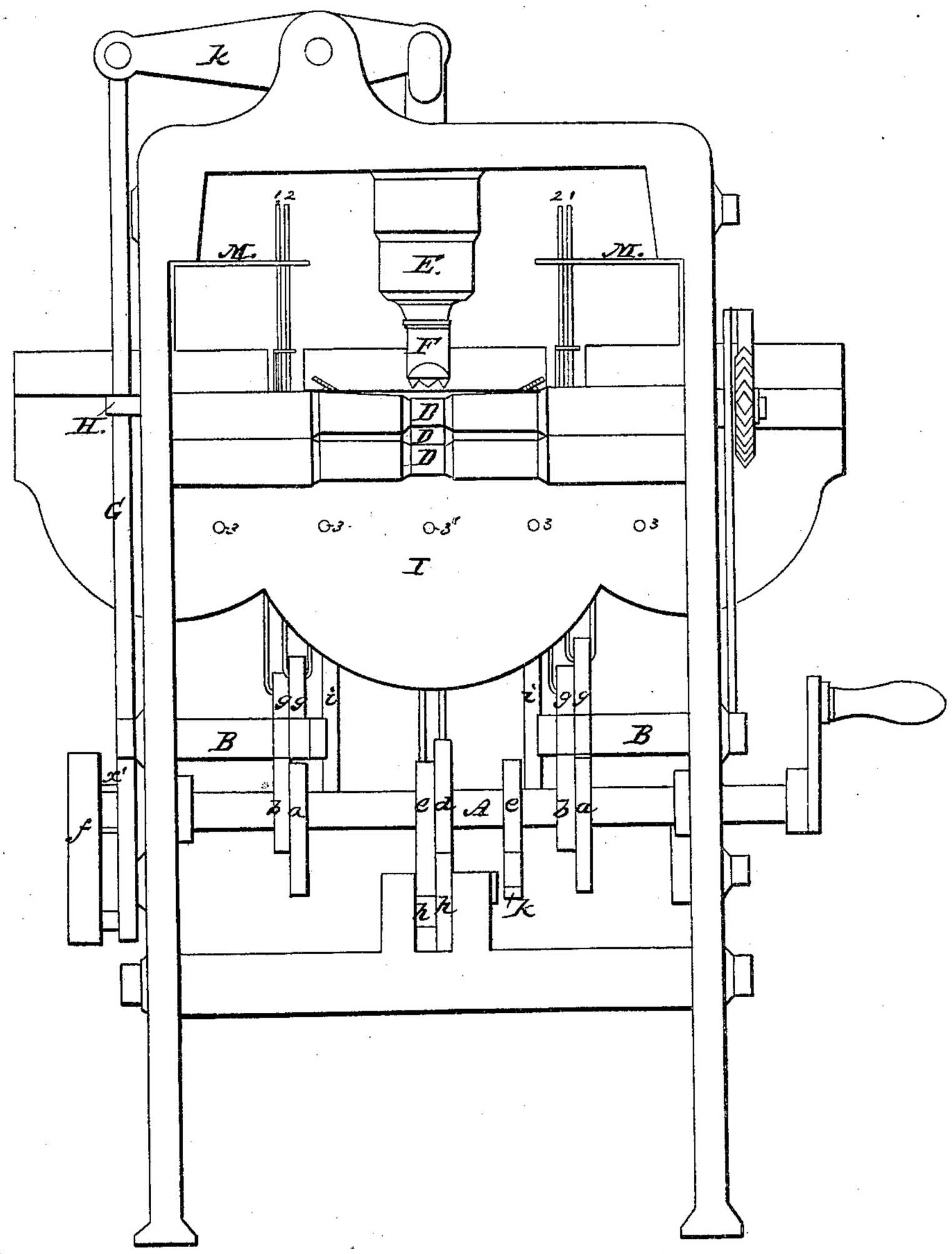
No. 10,173. Patented Oct. 25, 1853.

Fig. 2.



Sheet 3 - 3 Sheets.

K. Vogel.

Loom Shedding.

No. 10,173. Patented Oct. 25, 1853.

Fig. 4.

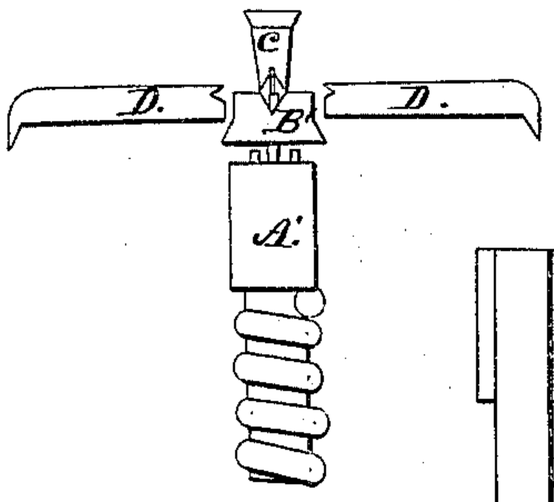


Fig. 5.

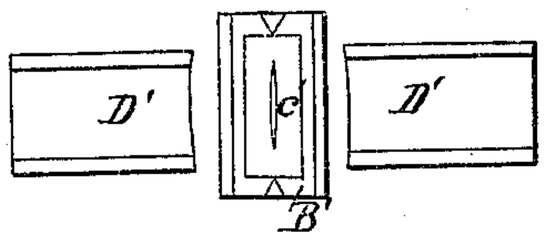
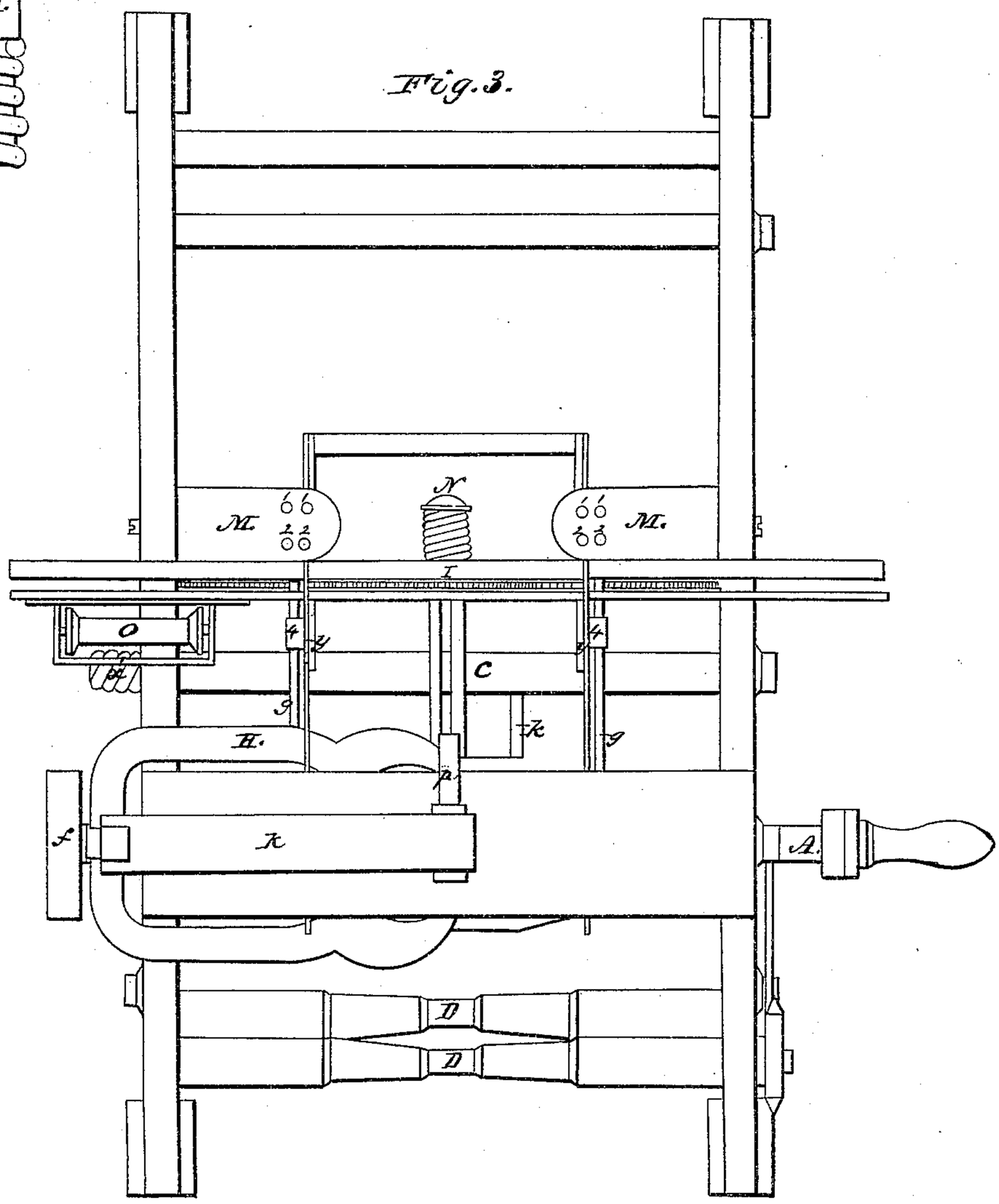


Fig. 3.



UNITED STATES PATENT OFFICE.

KASIMIR VOGEL, OF CHELSEA, MASSACHUSETTS.

LOOM FOR MAKING WEAVERS' HARNESS.

Specification of Letters Patent No. 10,173, dated October 25, 1853.

To all whom it may concern:

Be it known that I, KASIMIR VOGEL, of Chelsea, county of Suffolk, State of Massachusetts, have invented a new and useful Machine called "Vogel's Harness-Loom," for the Manufacture of Weavers' Harness; 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 the same letters and figures in Figures 1, 2, and Fig. 3 relate to the same parts of the machine.

Fig. 1 is a side elevation. Fig. 2 is a front elevation; Fig. 3, a top view. Fig. 4 is an elevation of the die; Fig. 5, a plan or top view of the die.

The nature of my invention consists in an arrangement of machinery which will operate so as to weave a border to the harness, and when the eye is placed between the thread connect the heddle yarn to a metallic eye, without forming a knot, loop or braid; and compress the eye, by means of a vertical and horizontal die, so as to wrap the heddle yarn and thereby form a new and improved heddle and harness.

Now be it here understood that throughout this description of my invention whenever I use the term heddle I mean the yarn and eye through which a thread of a warp passes for the purpose of being raised, or depressed during the operation of weaving, to afford room for the passage of the shuttle; and by the term harness I mean a combination of heddles as ordinarily used in the weavers' loom; these so far as I know being the terms usually applied thereto.

This machine consists of metallic parts, and in Figs. 1, 2 and 3 A is the main shaft having the cams marked *a*, *b*—*a*, *b*, *c*, *d*, *e*, and *f*, connected to it. Power is communicated to the main shaft by hand, steam, water or otherwise. The cams *a*, *b*—*a*, *b* elevate and depress the treadles *g*, *g*, *g*, *g*, which have the warp wires 1, 2—1, 2 connected to them at their ends, and which are elevated and depressed by the action of these treadles. An eye is made in the warp wires to allow the passage of the warp yarn. The cams *e*, *d* operate the treadle *h*, *h* and a cord is attached to the ends of these treadles and passed around the shaft N. This shaft has the gear 3 attached to it between the two plates I, I. The gear 3 is the driver of a line of gears on the same horizontal line which are meshed into a line of gears above them each being marked 3. On this upper line of gears a strap of cogs marked *x*, Fig. 1, is meshed and passes on these gears from side to side of the machine and conveys the shuttle box O to which the cog is fastened. The cam *c*, operates on the arm *k* which is affixed to the rocker shaft C; also the arms *i*, *i* are affixed to the same shaft and to bars *y*, *y*. On the bars *y*, *y* are the beaters 4, 4, which beat up the filling or the heddle yarn. On the shaft C, is a spiral spring X, which reverses the motion of shaft C, when the force of the cam *c* on the arm *k* ceases. The cam *f* operates on the connector G by means of a pin on the lower part of the connector, which is inserted and traverses in a groove on the side of the cam *f*. G has notches at the point H, Fig. 2, into which the ends of the horizontal levers H H are forced. G is also attached to the lever K, and K is connected with the piston F, which slides through the guide box E and acts on the vertical die C, Figs. 4 and 5. The levers H, H, being operated upon by the connector G press horizontally on the dies D′, D′, Figs. 4 and 5. The plate springs P, P are fixed to the frame of the machine near the lever K and serve to hold the metallic eye L. The rollers D, D, D are connected with the frame of the machine and are operated by a crank attached to the rocker shaft C, and a ratchet wheel and clutch on the end of the top roller D.

Figs. 4 and 5 represent the dies and apparatus for compressing the eye around the heddle yarn. A′ is a vertical shaft having on its top a tongue to receive the eye L, (Fig. 1,) and around its lower part a spiral spring. The tongue passes through the die B and into the die C′. Die B is fitted to the tongue of the shaft A′ so as to slide up and down freely upon it. Die C′ is inserted in the end of the piston E, (Fig. 2). It is forked at its lower corners and has an orifice to receive the point of the tongue in the top of the shaft A′. The dies D′, D′ are grooved at the ends next the dies B′, C′ and are fitted with lips at the opposite ends, which press on plate springs. The shaft A′ is fitted to a hole in the frame of the machine directly under the axis of the piston E, (Fig. 2,) and is made to rest on the spiral spring around its lower part. The die B′ rests on the top of the shaft A′ and is

kept in place by means of pins or otherwise and moves with the shaft A′. The side dies D′, D′, are fitted to grooves so as to slide horizontally and are operated by the levers H, H, (Figs. 1, 2, and 3).

The action of the machine is as follows: Spools containing the warp yarn are placed on the shaft at Q, Fig. 1, and the threads passed through the holes in the warp wires 1, 2 and between the bars of the beaters 4, 4 and between the rollers D, D, D. Another spool containing the heddle yarn is placed in the shuttle box O. The end of this cord is fastened to the outer thread of the warp. Now by the operation of the cams *a*, *b*, *a b* the warp wires are raised and carry up the warp yarn which passes through warp wires 1, 1, or 2, 2. The cams *c* and *d* acting on the treadles *h*, *h* connected to a cord passing around the shaft N causes the gears 3′ and 3, 3, 3 to revolve to the right and left and convey the shuttle between the threads of the warp in the usual mode of weaving. The beaters are drawn back by means of the cam *c* acting on the arm *k* affixed to the rocker shaft C. At a point on the cam *c* the action on the arm *k* ceases and the beaters are carried forward by the action of the spiral spring on the end of the rocker shaft C against the filling or heddle yarn. The heddle yarn is then placed by hand or otherwise in the grooves of the metallic eye which has dropped on the tongue of the shaft A′. By the action of the spiral spring around A′, the tongue is thrust to the point of the plate spring P, P and the eye slides down the spring to it, being governed by the action of a small lever on the springs P P, which permits each one to drop at the time required. Fig. 4, and the dies D′, D′ and B′ C′, Figs. 4 and 5, by the action of the levers H, H, and K, compress the lids of the eye around each yarn of the heddle and connect two yarns to each eyelet, without making a knot, braid, or loop, in the heddle, as by the usual mode.

I in this machine so set the cams as to give the requisite time for each operation, or the movement necessary to produce the result specified without in any way delaying the movements of one or the other parts.

Having thus described the nature and advantages of my invention and the best manner of carrying the same into effect, I wish it to be understood that I do not confine myself to the precise details hereinbefore set forth; but

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

The combination of the loom for weaving the borders of the harness; with the press, for securing the metallic eye upon the threads of the harness without a knot, braid, or loop, substantially in the manner described, and shown, in the accompanying drawings.

In witness whereof, I, the said KASIMIR VOGEL have hereunto subscribed my name, this, the twenty ninth day of December, one thousand eight hundred and fifty two A. D.

KASIMIR VOGEL.

In presence of—

HAMLETT BATES,

WM. A. WILLIAMS.