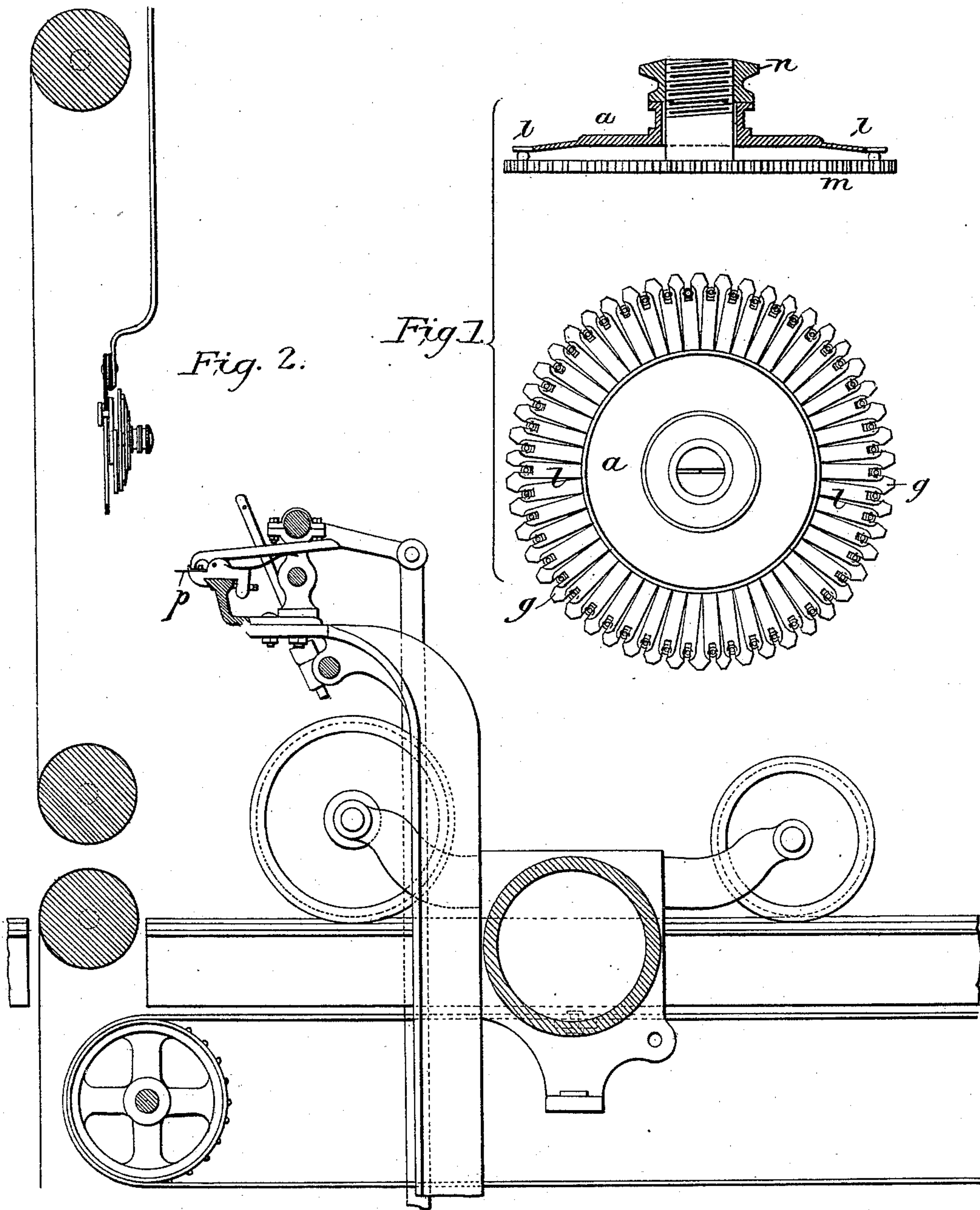


F. P. LANGET.

BEADING ATTACHMENT FOR EMBROIDERING MACHINES.

No. 473,936.

Patented May 3, 1892.



WITNESSES:

Henry E. E. vrding,
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INVENTOR

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(No Model.)

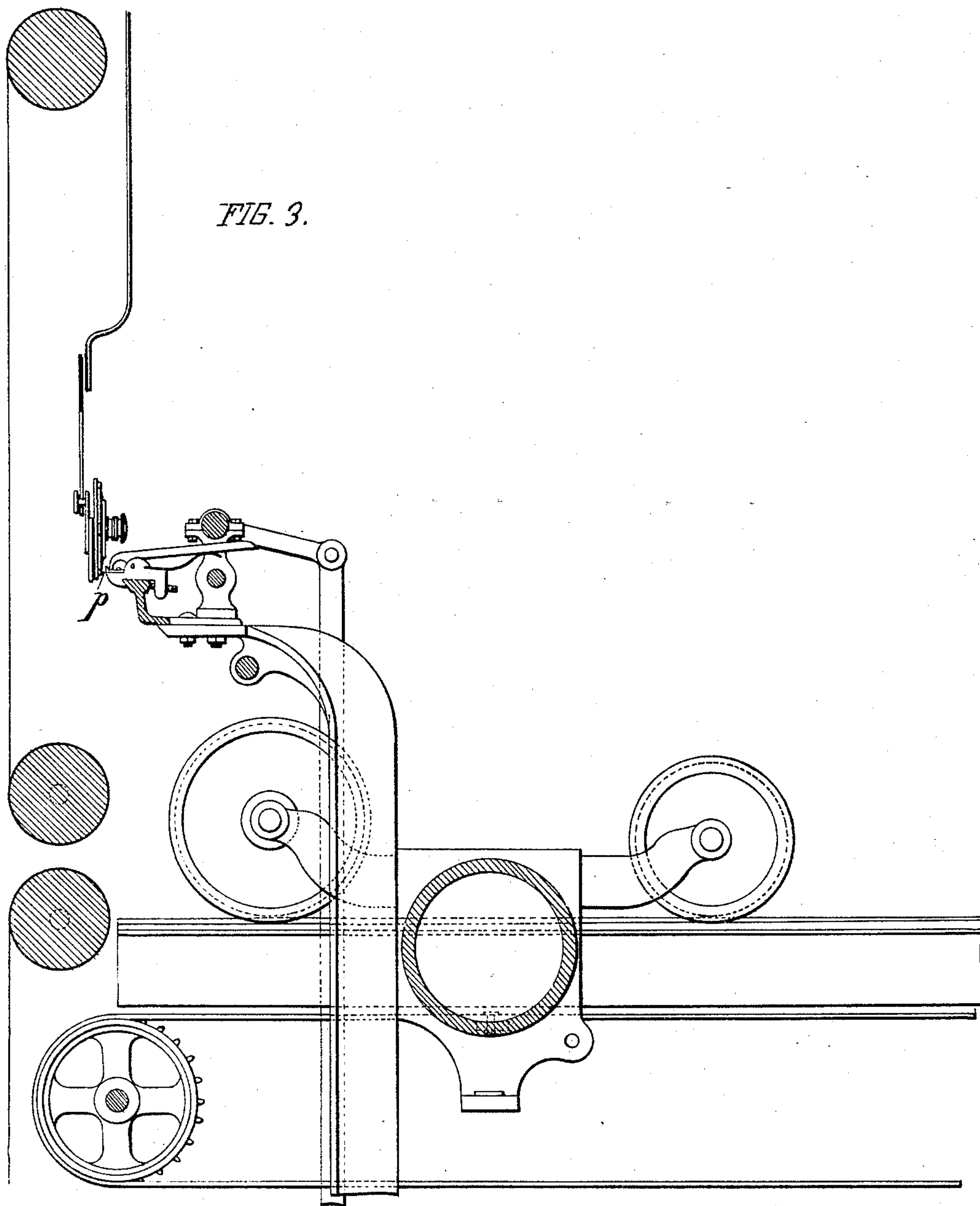
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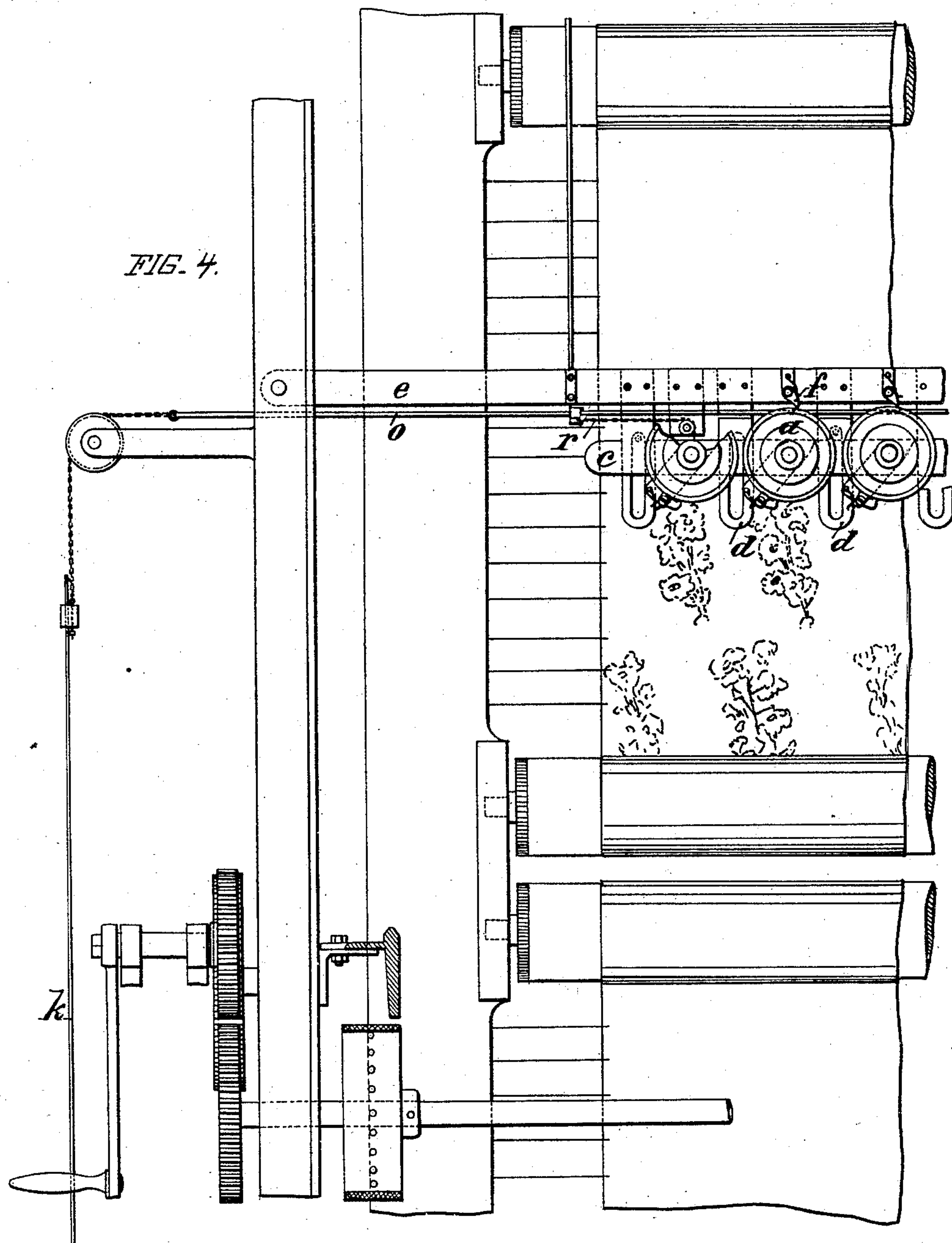
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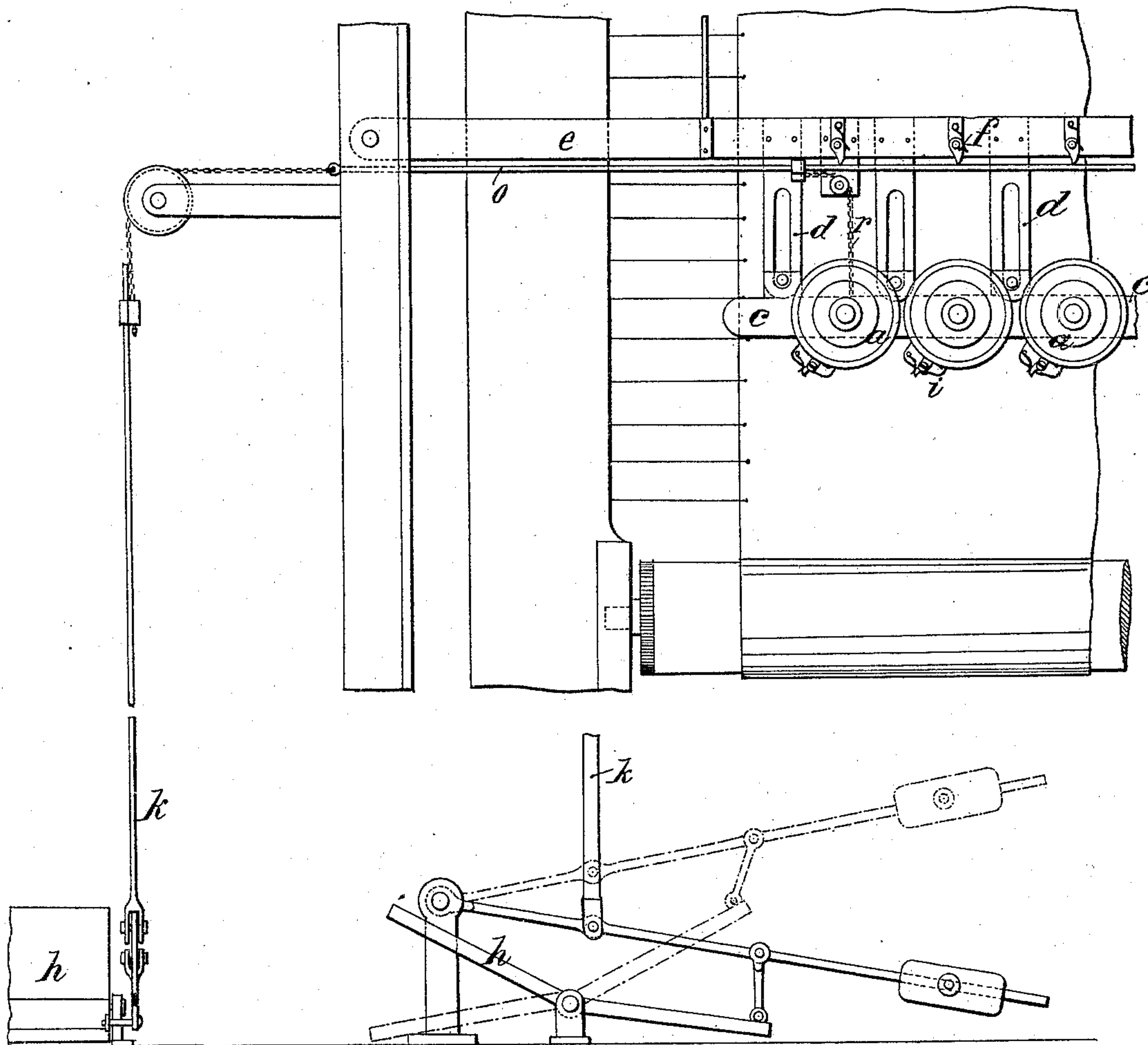
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FIG. 5.



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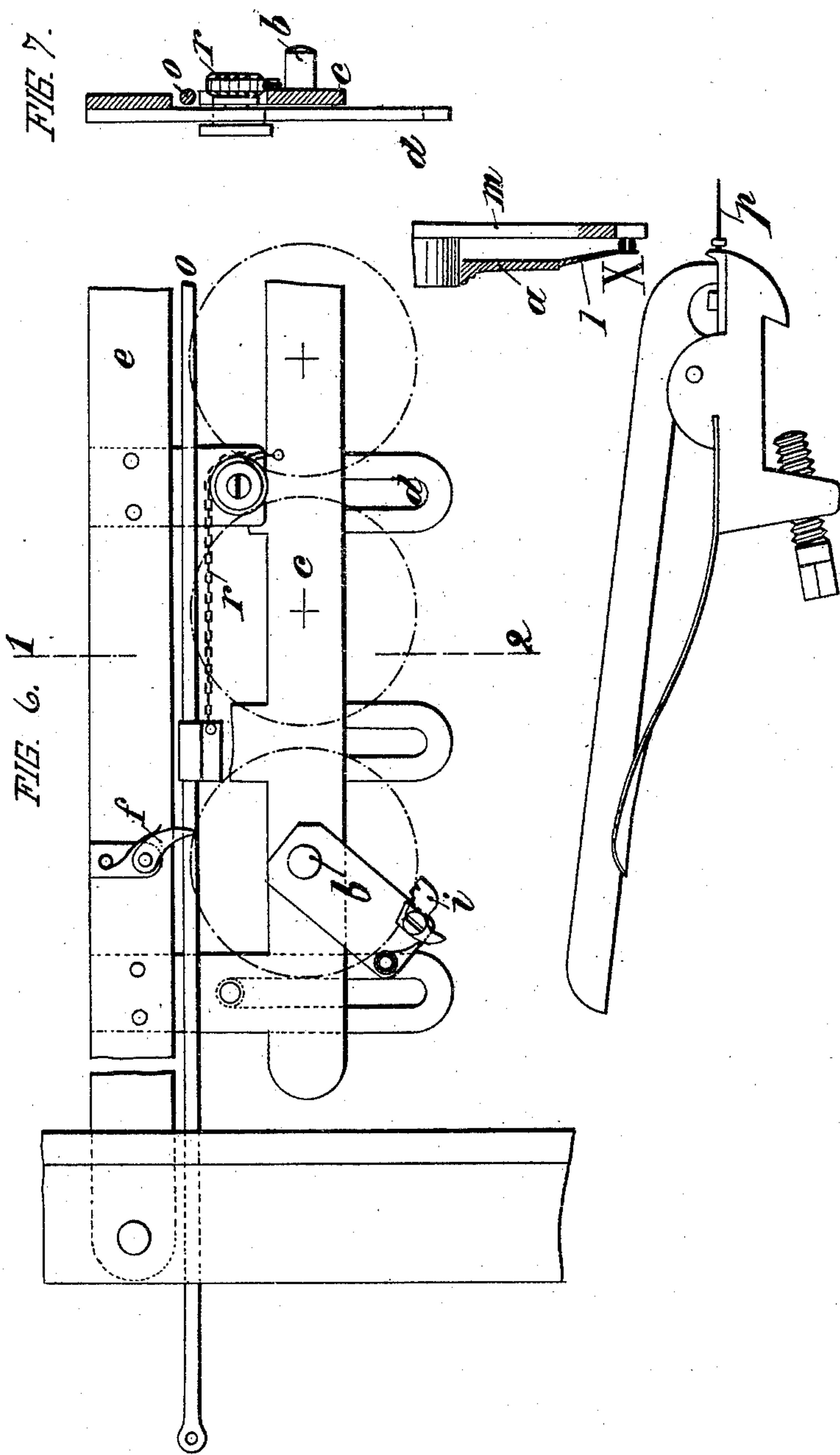
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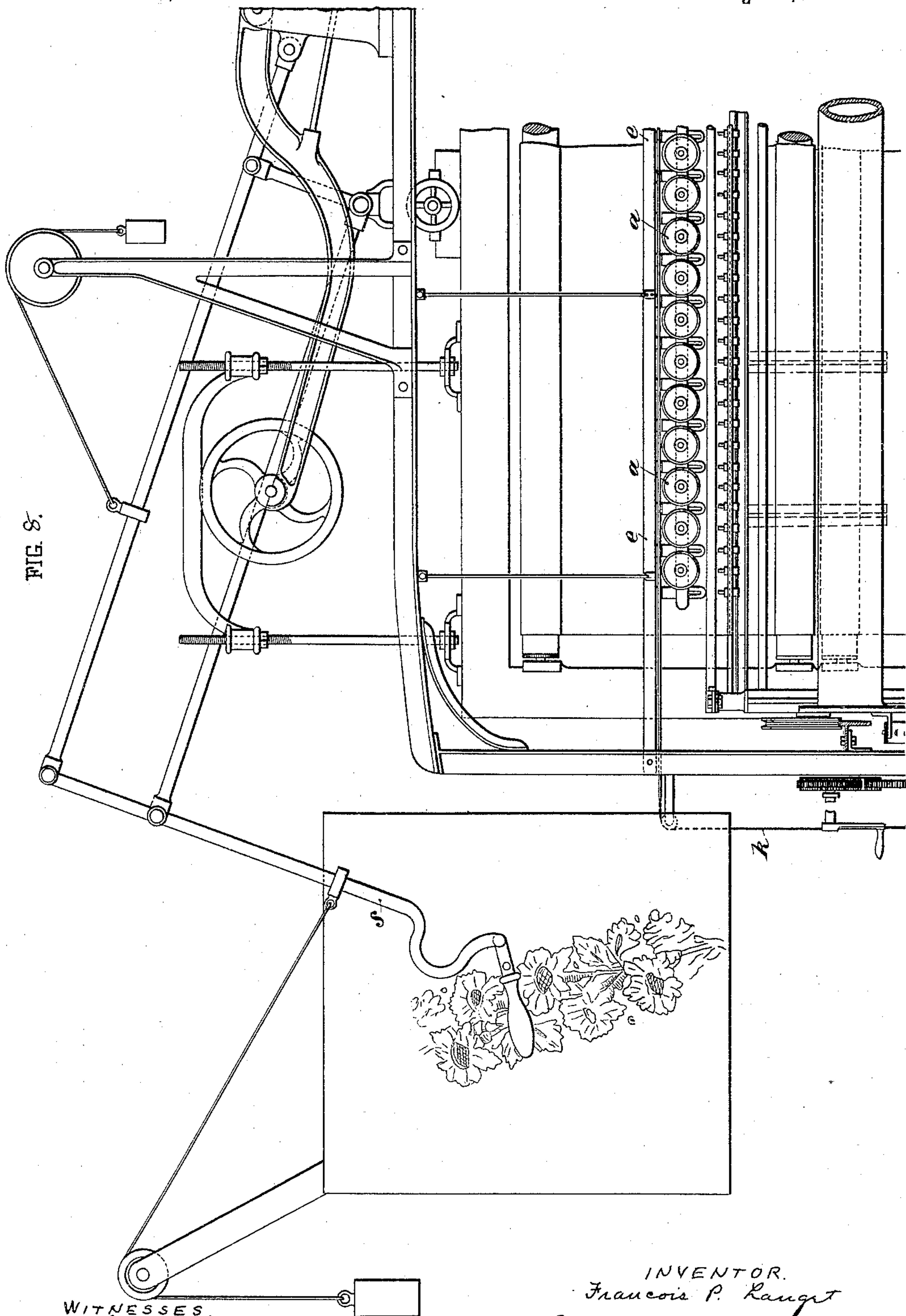
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F. P. LANGET.

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Patented May 3, 1892.



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UNITED STATES PATENT OFFICE.

FRANÇOIS PRUDENT LANGET, OF PARIS, FRANCE.

BEADING ATTACHMENT FOR EMBROIDERING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 473,936, dated May 3, 1892.

Application filed September 10, 1891. Serial No. 405,349. (No model.) Patented in France January 3, 1889, No. 195,143; in Switzerland February 6, 1889, No. 523, and in Germany February 12, 1889, No. 49,098.

To all whom it may concern:

Be it known that I, FRANÇOIS PRUDENT LANGET, of the city of Paris, France, have invented Apparatus for Supplying Beads to the Needles of Embroidering and other Machines, (for which I have obtained Letters Patent in France for fifteen years, dated January 3, 1889, No. 195,143; in Germany for fifteen years, dated February 12, 1889, No. 49,098, and in Switzerland for fifteen years, dated February 6, 1889, No. 523,) of which the following is a full, clear, and exact description.

My invention relates to apparatus for mechanically applying beads of all kinds and sizes, spangles, stars, and other ornaments in mechanical embroidery and trimming making.

The apparatus of this invention may be applied to existing embroidering-machines, as well as to ordinary sewing or embroidering machines.

In the accompanying drawings, forming part of this specification, Figure 1 is a top plan view and a cross central sectional view of my improved bead holder and distributor.

Fig. 2 is a transverse vertical section of a portion of an embroidering-machine with the distributor attached and separated from the needle. Fig. 3 is a similar view showing the distributor in position for fixing a bead in the embroidery. Fig. 4 is a front elevation of Fig. 2, with the needle-carriage removed. Fig. 5 is a front elevation of Fig. 3 and side elevation of the distributor-lever mechanism. Fig. 6 is an enlarged view in elevation of the distributor-support and needle-lever. Fig. 7 is a cross-section of Fig. 6 on line 1 2. Fig. 8 is a front elevation of the working parts of an embroidering-machine, with the bead holder and distributor attached.

The same letters of reference indicate corresponding parts in each of the several figures.

My invention consists, mainly, in the employment of a bead holder and distributor in connection with an embroidery or sewing machine. This bead-holder, as shown in Fig. 1, consists of a disk *m*, provided with openings near the outer periphery, through which the needle of an embroidering or sewing machine can pass. This disk *m* rests and is adapted to rotate on a stud *b*, secured to a rail or bar *c*, as shown in Figs. 6 and 7. This disk *m* is

constructed with an annular upward-extending boss, threaded at its upper end to receive a threaded tightening-nut *n*. Above the disk *m* is arranged a spring-tongued presser-plate *a*, also provided with an annular upward-extending boss surrounding the boss of the disk *m* and adapted to be pressed upon by the tightening-nut *n*, as shown in vertical cross-section in Fig. 1. This spring-presser plate *a* is provided on its outer periphery with teeth *g* and flexible tongues *l*, which are notched on the outside, so as to clamp the bead between the disks *a* and *m* in such manner that the opening in the bead shall be within the notch and also directly in line with the needle-openings in the disk *m*.

To a fixed cross-bar *e* are secured guides *d*, provided with vertical slots, in which the bar *c*, carrying the bead-holders, can be vertically reciprocated by a cam or other ordinary means connecting with the driving mechanism. As many bead-holders can be employed as there are needles in the machine to receive the beads.

The rotating motion of the bead-holder is regulated and limited by means of a spring-pawl *f*, pivoted to the cross-bar *e* and engaging with the teeth *g* on the periphery of the spring presser-plate *a*, so as to move the plate the distance of one tooth and bring another bead into proper position in the path of the needle. At the same time that the pawl *f* engages one of the teeth of the plate *a* a pawl *i* engages a lower tooth on said plate *a*. This pawl *i* is pivoted to a bar, also pivoted on the stud *b*, and is held in contact with the tooth of the plate *a* by means of a spring, as clearly shown in Fig. 6. By this arrangement as the bar *c* descends and the pawl *f* is released from contact with the tooth of the plate *a* the pawl *i* will still continue to hold the plate *a* in the exact position established by the pawl *f*. The object of this combined rotating and reciprocating movement of the bead-holder is to cause the bead to be properly presented for the action of the needle *p* when it is to be secured to the material.

In Fig. 3 the needle *p* is represented in the act of passing through the opening in the bead, so as to allow the needle to carry it. After the needle has completed its forward move-

ment and has received the bead it is withdrawn out of contact with the bead-holder and the holder then rises into its upward position, as shown in Fig. 2, when the holder is again rotated the distance of one tooth by means of the pawl *f*, so that in its next downward movement another bead shall be brought into position in the next forward movement of the needle.

Before commencing operations with this machine the beads are first arranged in proper position between the tongues *l* and disk *m* by a suitable distributing device and firmly secured in such position by clamping the plate *a* down onto the beads and the disk *m* by the tightening-nut *n*.

The flexible tongues *l* enable beads of different sizes to be clamped at one time for varying the effect. Long beads or bugles may also be held in the distributor, a washer corresponding in thickness to the length of the bugles being interposed between *a* and *m* to prevent the beads from dropping out when those at the other side are removed.

Spangles, stars, and other ornamentation suited to embroidery and trimmings may also be similarly applied. Ordinary embroidery may also be combined with bead-work, and thus vary the effects produced. For example, foliage may be embroidered and fruit be worked in beads by putting the beading apparatus in or out of action at the desired times by means of a hand lever or a treadle *h*, connected by rod *k* to rod *o*, Figs. 4 and 5, running the whole length of the machine and connected to the bar *c* by chains *r*, passing over guide-pulleys. When the drawing or pattern placed on the pantograph *s*, Fig. 8, indicates that a bead should be applied to the embroidery, the treadle *h* is depressed, so as to lower the distributor and bring a bead into the path of the needle *p*, which passes through it, and by its thread stitches it in the embroidery, the stitch being formed in the same manner as those without beads.

I claim—

1. In an embroidering-machine, the combination, with the stitch-forming mechanism, of a bead-holder comprising a bottom disk

perforated with needle-holes near its outer periphery, a presser-plate provided with flexible tongues on its outer periphery for securing beads between said flexible tongues and bottom disk in the line of movement of the needle, and means for properly presenting the holes in the beads successively to the action of the needle, substantially as described, and in the manner and for the purposes set forth.

2. In an embroidering-machine, the combination, with the stitch-forming mechanism, of an automatic rotating and vertically-reciprocating bead-holder comprising a bottom disk perforated with needle-holes near its outer periphery, a presser-plate provided with flexible tongues on its outer periphery, gear-teeth on the outer edge of the said presser-plate, ratchet-pawls adapted to engage said gear-teeth, and a tightening-nut adapted to secure the beads between said presser-plate and disk in proper position for the needle, substantially as described, and for the purposes set forth.

3. In an embroidering-machine, the combination, with the needle mechanism, of a bead-holder provided with beads properly adjusted therein, and means for automatically rotating and vertically reciprocating said bead-holder, all said parts being arranged and adapted to operate substantially as described, and for the purposes set forth.

4. In an embroidering-machine, the combination, with the needle mechanism, of a bead-holder adapted to automatically present the beads to the needle, a pawl adapted to engage said bead-holder and regulate its forward movement, and a pawl adapted to engage said bead-holder when the regulating-pawl is out of contact, substantially as described, and for the purposes set forth.

The foregoing specification of my apparatus for supplying beads to the needles of embroidering and other machines signed by me this 22d day of August, 1891.

FRANÇOIS PRUDENT LANGET.

Witnesses:

ROBT. M. HOOPER,
ALBERT MOREAU.