3 Sheets—Sheet 1.

W. WEAVER.

Looms for Weaving Terry Fabrics.

No. 211,814. Patented Jan. 28, 1879.

Fig. 1.

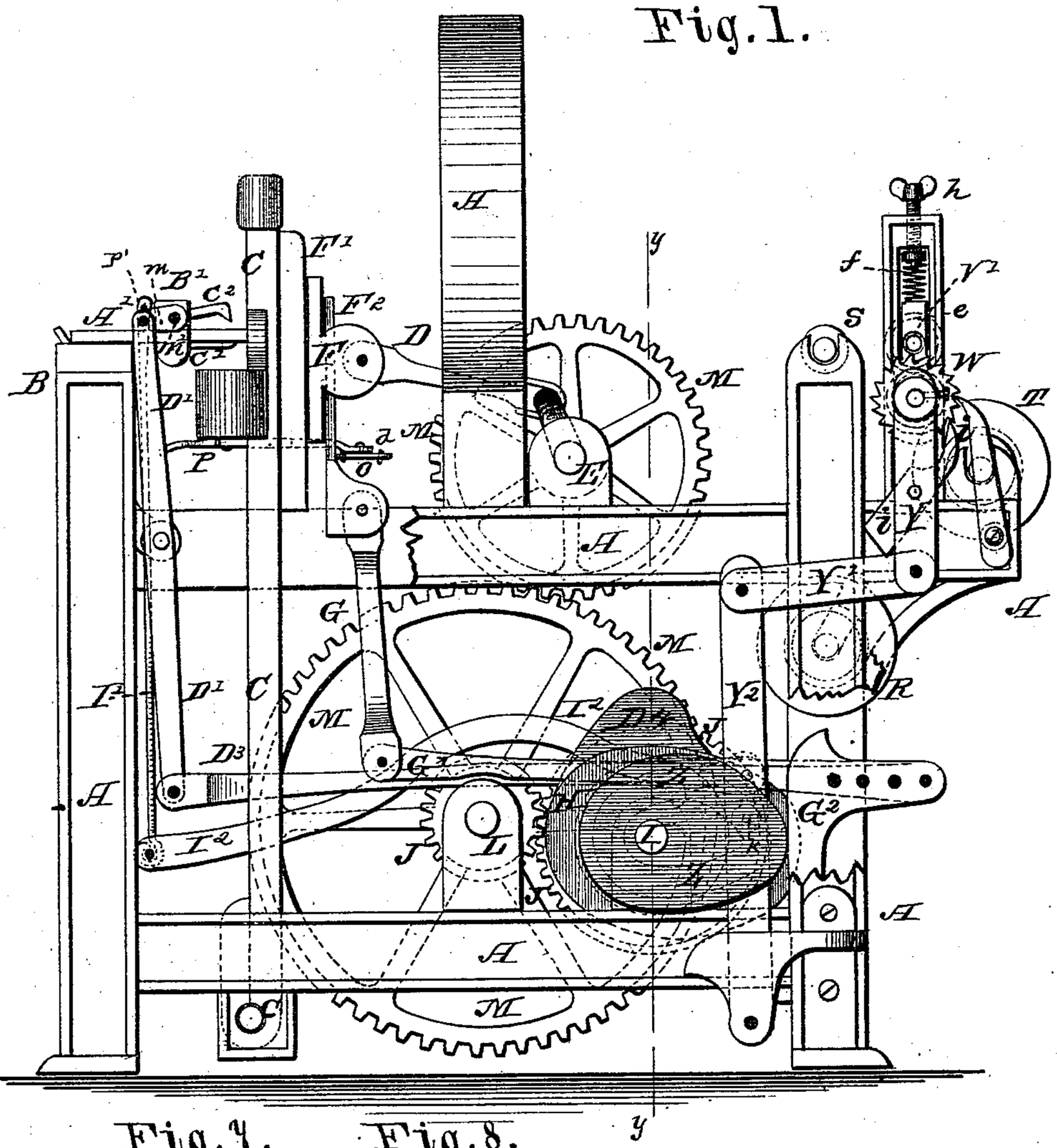
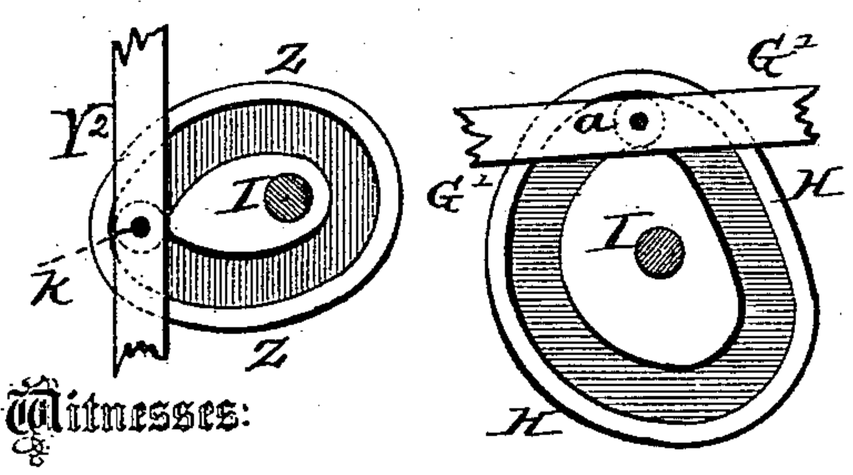


Fig. 4. Fig. 8.



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3 Sheets—Sheet 2.

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Fig. 2.

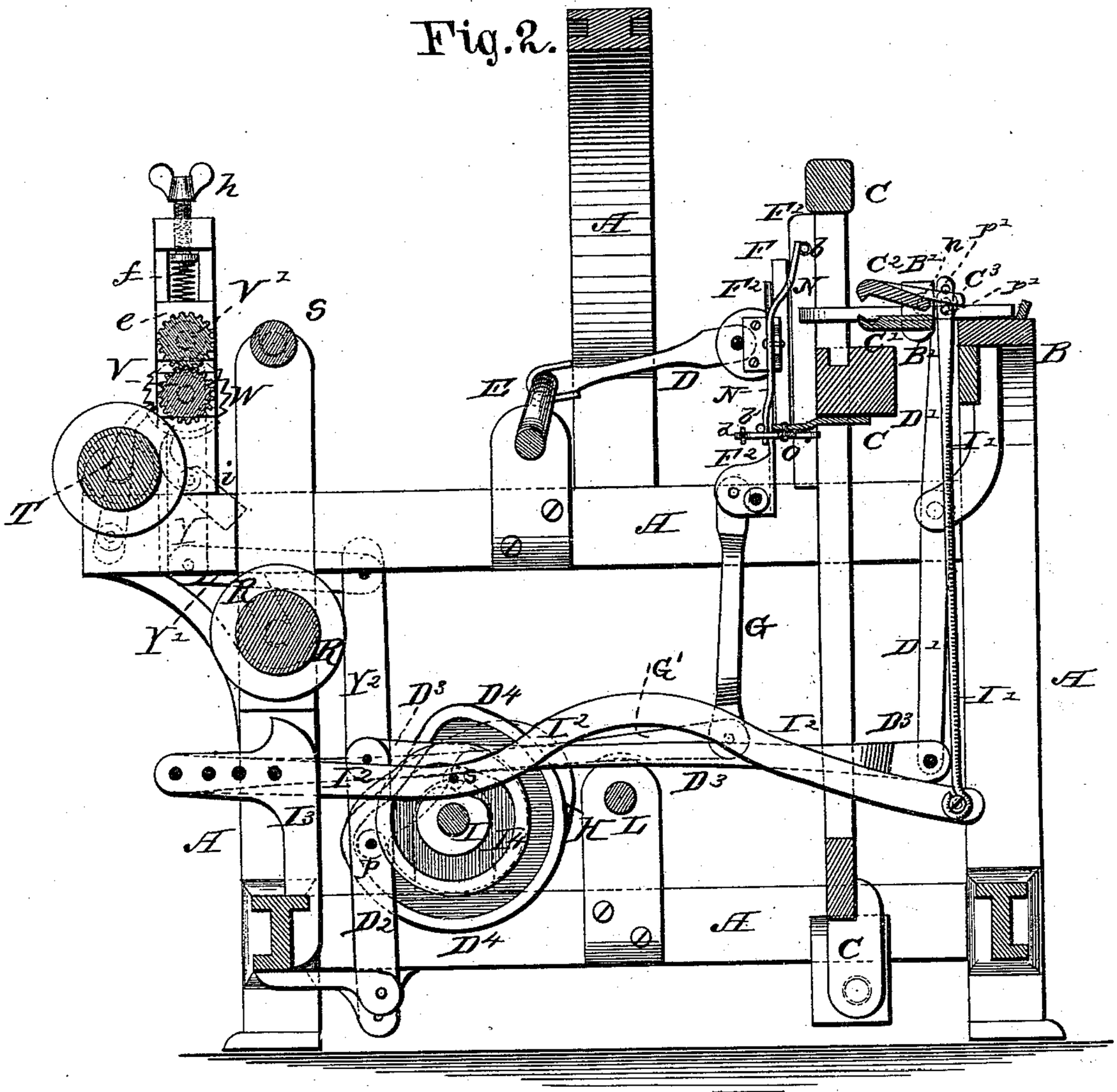


Fig. 5.

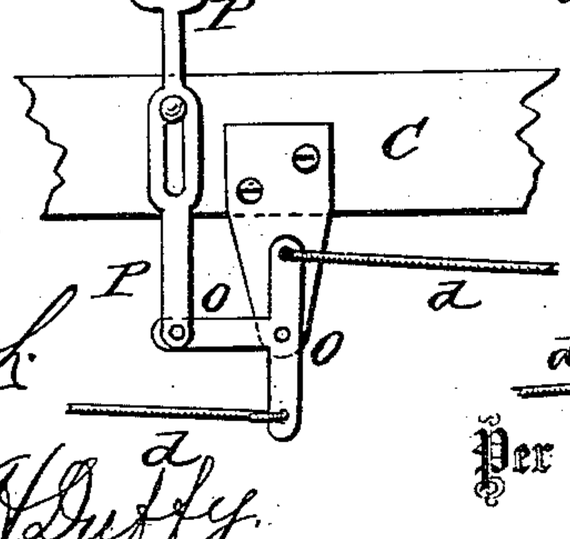
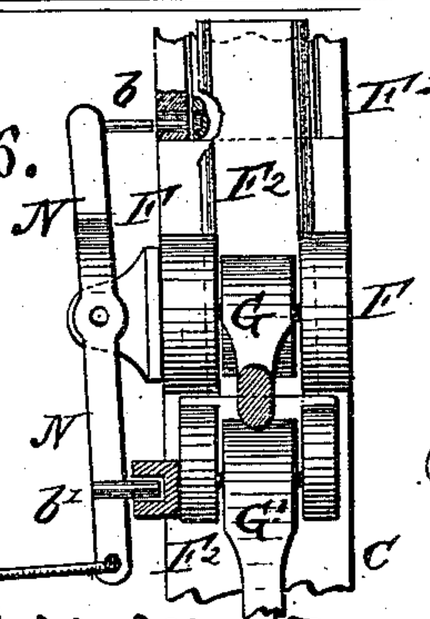


Fig. 6.



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3 Sheets—Sheet 3.

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Fig. 3.

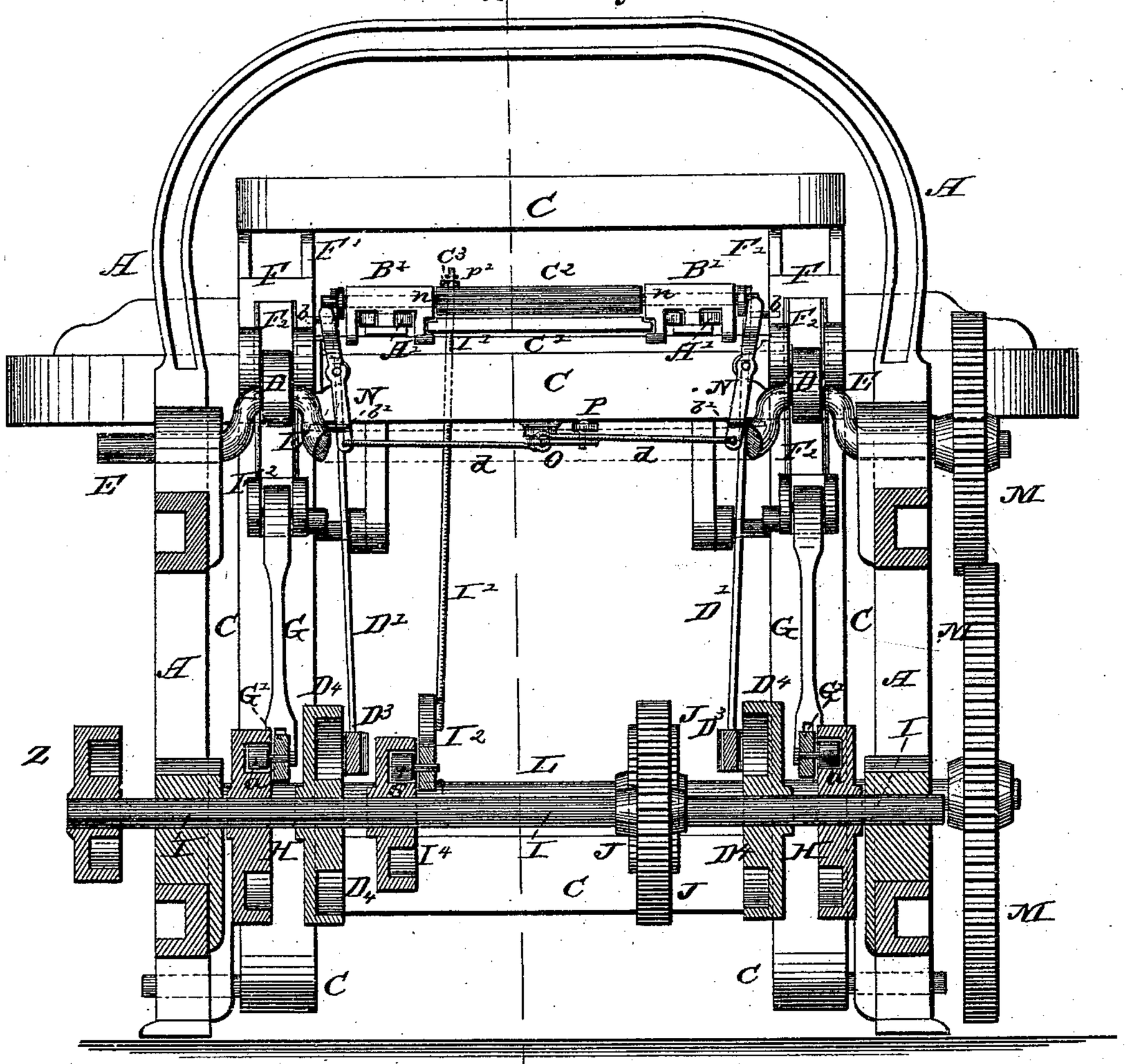
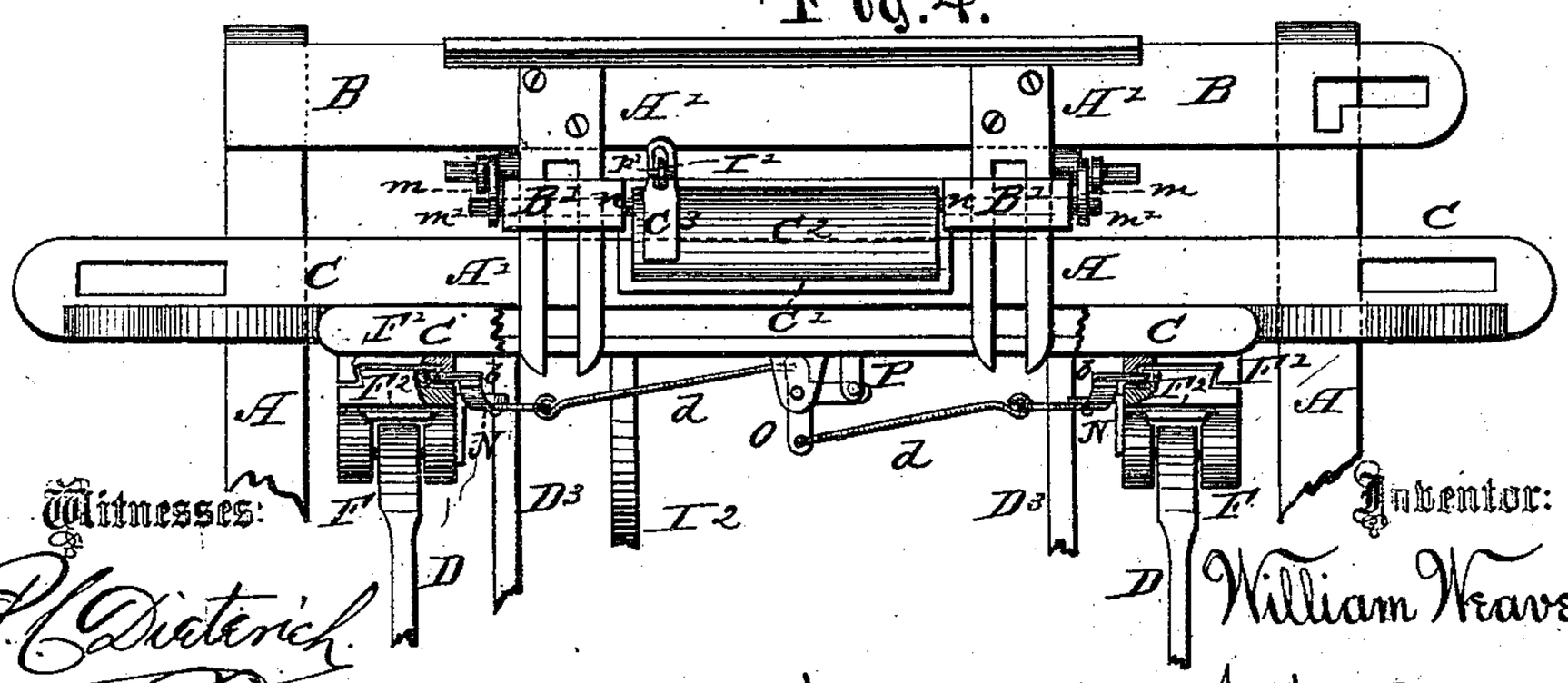


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM WEAVER, OF GREENWICH, NEW YORK, ASSIGNOR TO EDWARD HENRY WEAVER, OF SAME PLACE.

IMPROVEMENT IN LOOMS FOR WEAVING TERRY FABRICS.

Specification forming part of Letters Patent No. **211,814**, dated January 28, 1879; application filed April 10, 1878.

To all whom it may concern:

Be it known that I, WILLIAM WEAVER, of Greenwich, in the county of Washington and State of New York, have invented certain new and useful Improvements in Looms for Weaving Terry Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to looms for weaving terry fabrics; and it consists in the construction and arrangement of certain devices whereby fabrics may be woven with long or short piles or loops upon one or both sides, and for any portion of the fabric, without the necessity of stopping the loom in effecting the change from plain fabric to piled or looped, and vice versa, as will be hereinafter more fully set forth, and pointed out in the claims.

In the annexed drawings, to which reference is made, and which fully illustrate my invention, Figure 1 is a side elevation of so much of a loom as will show my invention. Fig. 2 is a central vertical section of the same through the line *x x*, Fig. 3. Fig. 3 is a transverse vertical section through the line *y y*, Fig. 1. Fig. 4 is a plan view of the breast-beam and lathe. Figs. 5 and 6 are detailed views of devices connected with the lathe. Figs. 7 and 8 are views showing the cams employed in the loom.

A represents the frame-work of the loom, with breast-beam B. C is the lathe, pivoted at its lower end, in the usual manner, to the frame, and operated by pitmen D D from the crank-shaft E. The end of each pitman D is pivoted between two ears on a slide, F, which is movable up and down in a guide, F^1, secured to the rear side of the upright side arm of the lathe. In the slide F is an auxiliary slide, F^2, also formed with suitable ears, between which is pivoted a rod or bar, G, connecting with a lever, G^1, at its lower end. This lever G^1 extends toward the rear of the loom, and its rear end is pivoted in a slotted standard, G^2, in such a manner that its fulcrum can be changed forward or backward, as required. This may be accomplished by having said standard perforated or slotted, so as to change the fulcrum at will.

On the side of the lever G^1 is a stud with friction-roller *a*, which works in a slot in a cam, H, secured upon a shaft, I. This shaft receives its motion through gears J J from the main driving-shaft L, which latter shaft, through gears M M, also imparts motion to the crank-shaft E. On the slide F is pivoted a lever, N, having projecting pins *b* and *b'*, respectively, at its upper and lower ends. The lower ends of the two levers N N are, by rods *d d*, connected with two arms of a T-shaped lever, O, which is pivoted to an arm on the under side of the lathe, and the center arm of said lever O is connected to a slide, P, under the lathe. This slide or sliding handle P, by being drawn forward at the proper time, causes the levers N to turn upon their pivots, so as to throw the lower pins, *b'*, inward into hubs formed on the auxiliary slides F^2, and thus locking the two slides F and F^2 on each side together.

It will readily be seen that when the slides F are raised in their guides F^1 the throw of the lathe is diminished, on account of the pitman ends being farther from the fulcrum of the lay or of its swords; but when the slides F are lowered the length of the throw is increased, because the pitman ends are closer to said fulcrum. This being understood, it follows that when the main and auxiliary slides are locked together, as above described, for each revolution of the cam H, the slide F will be moved up and down, and hence one or more strokes of the lathe will be short. I prefer to arrange the parts in such manner that two strokes will be short and one the full length, the result of which is, that two picks will not be beaten up close to the woven fabric, but remain a certain distance from it. The let-off is arranged to operate at the same time at the full stroke, to produce a slackness that will permit the loosely-woven part to be beaten up completely by the full stroke of the lay, and form the loops by the puckering up of the loose warps in the space where the weft is absent. It will thus be seen that the

slack is taken up by this full stroke, and the third pick is beaten up, carrying this and the preceding picks firmly against the cloth, and forming the loop immediately in front of them. By pushing back the handle P at the proper time the levers N are turned upon their pivots, so as to draw out the pins b', and throw the pins b inward to lock the slides F in their guides F^1, leaving the auxiliary slides F^2 free to be moved up and down by the action of the cams H, lever G^1, and connecting-rod G, thus in no way affecting the slides F, but allowing the lathe to move the same distance at each stroke, thereby weaving ordinary fabric. By this device the change from ordinary fabric to looped or pile fabrics, and vice versa, can be instantly effected without stopping the loom.

R is the roller on which the body-warp is placed, said body-warp passing upward over a roller, S, and then forward in the usual manner. T is the roll for the terry-warp, which is passed between two rollers, V V'. W is a ratchet-wheel on the journal of the lower roll, V, said ratchet-wheel being operated by a pawl, *i*, on the arm Y. This arm Y is operated by means of a rod or bar, Y^1, lever Y^2, and cam Z. This cam is so timed that the pawl will not operate on the ratchet-wheel while the two short picks are made by the lathe, but will turn the roller V to draw forward the terry-warp at the same time as the lathe is making the long or full stroke, thereby making a uniform length of loop or pile of any desired length.

In the drawings I have shown a clamp for seizing upon the warp-threads and forming them into loops, with means for operating the same; but while such parts are shown they are not claimed, as they form the subject-matter of another application. Further, I have in this case only described the devices for forming the terry-surfaces, and how the same are manipulated, it being understood that the shedding and take-up devices, though not shown, are to be substantially the same as ordinarily used in looms.

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

1. In a loom for weaving looped or piled fabrics, the combination, with the lathe, of a sliding fulcrum, to which the pitman is connected, with devices for moving said fulcrum up and down, and for locking the fulcrum when desired, whereby the lathe may be made to make alternately one or more short strokes and one long stroke, or all the strokes of the same length, as and for the purposes herein set forth.

2. The combination, with the lathe C, of the guides F^1, slides F, with pitman D, connecting with the crank-shaft E, the auxiliary slides F^2, levers N, with pins b b', connecting-rods G, levers G^1, with rollers *a*, and the cams H, all substantially as and for the purposes herein set forth.

3. The sliding handle P, T-lever O, rods *d*, and levers N, provided with pins b b', in combination with the lay and the guides F^1, slides F, connecting with the crank-shaft E, and auxiliary slides F^2, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM WEAVER.

Witnesses:
ROBERT W. LOWBER,
C. H. WATSON.