

No. 626,161.

Patented May 30, 1899.

A. J. HANKS.
LET-OFF AND TAKE-UP FOR LOOMS.

(Application filed Mar. 1, 1898.)

(No Model.)

Fig. 1.

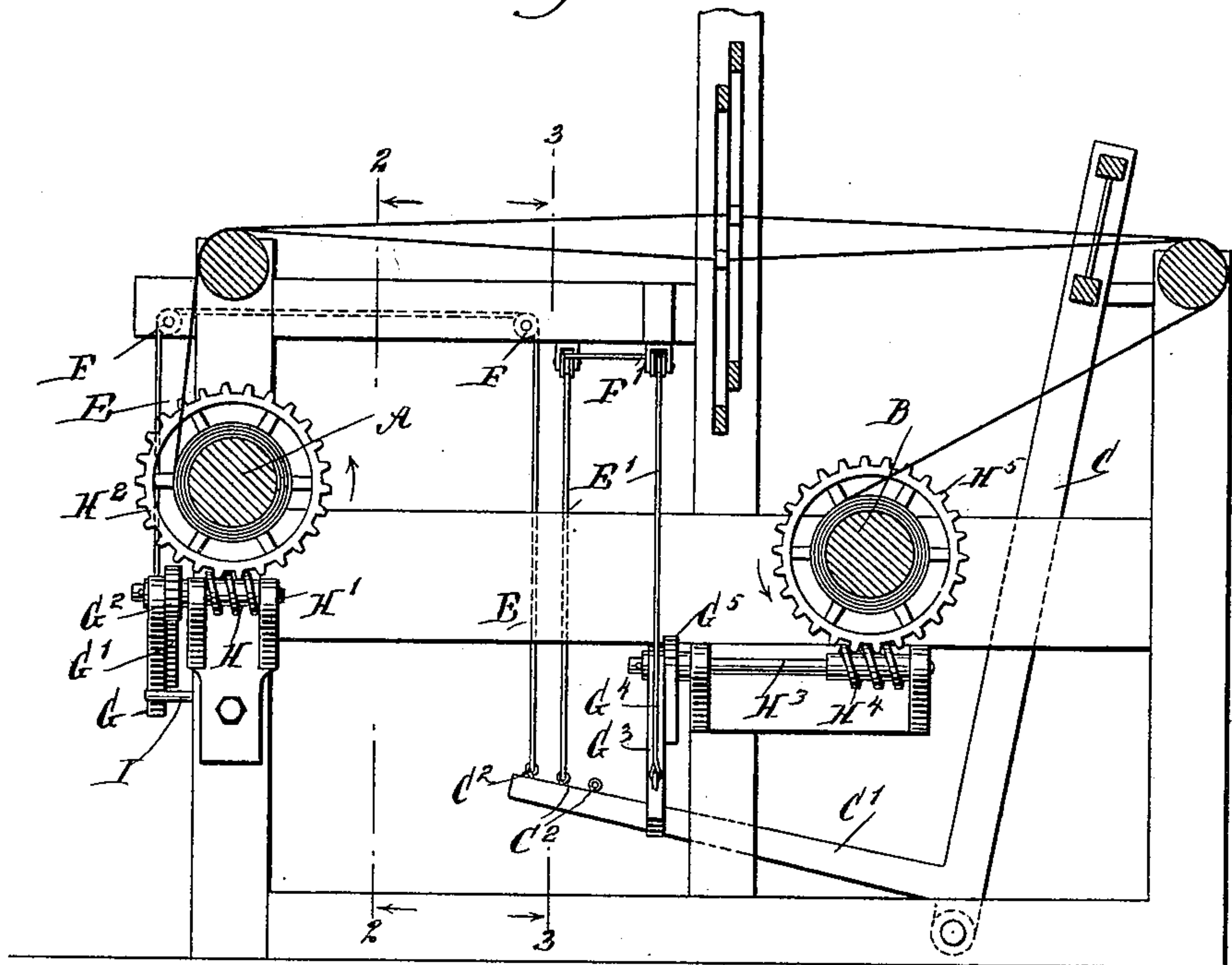
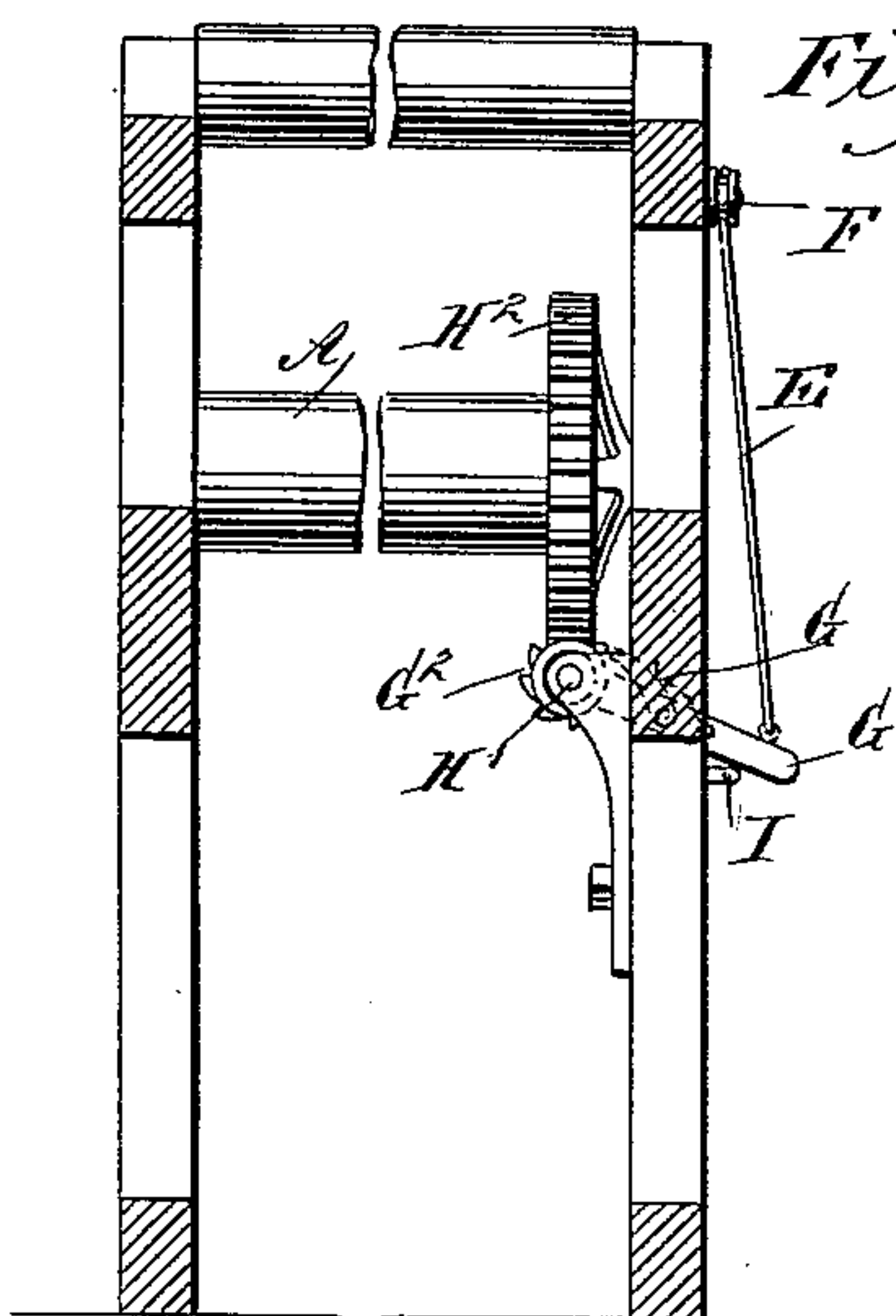


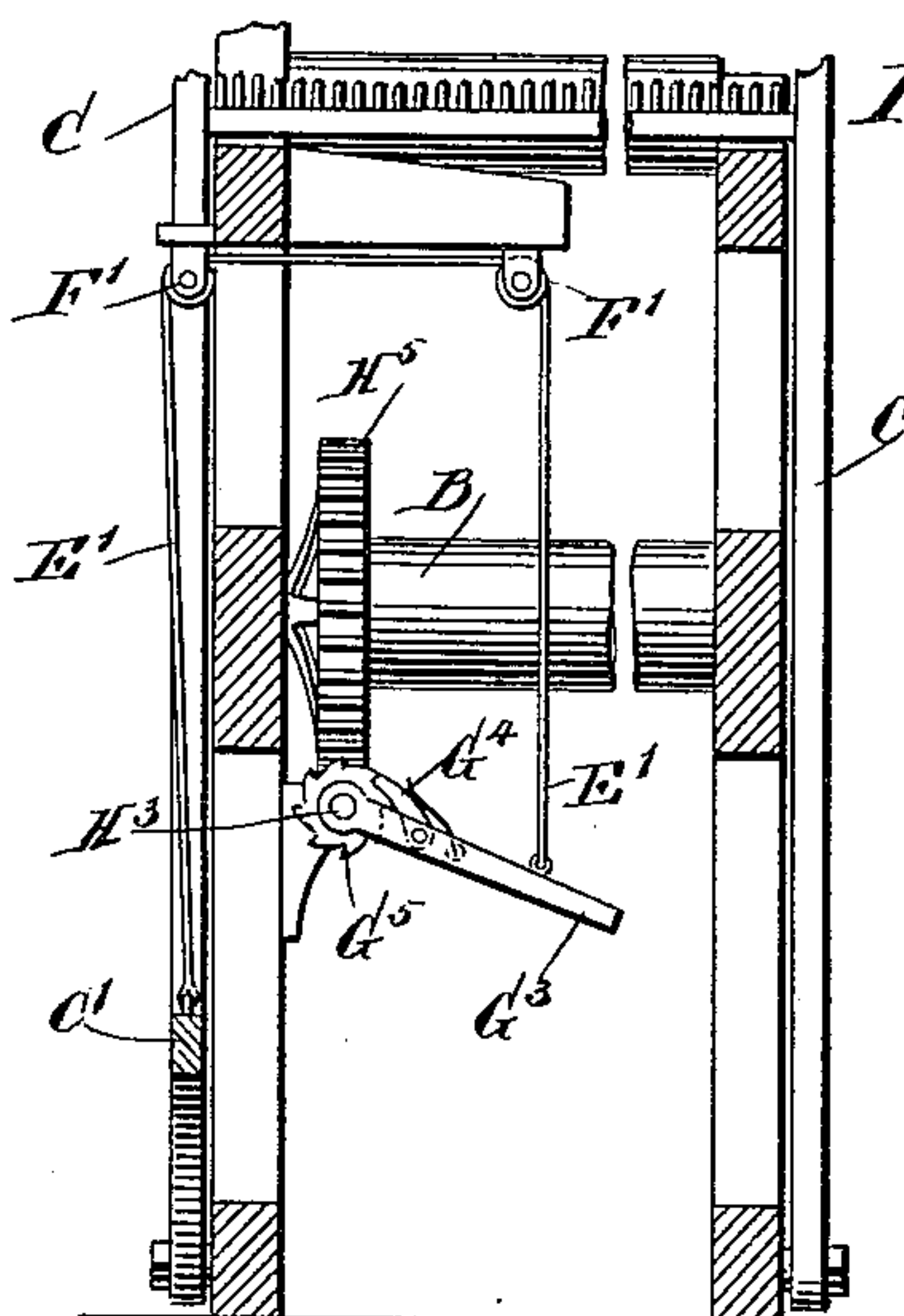
Fig. 2.



WITNESSES:

Edward Thorpe.
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Fig. 3.



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LET-OFF AND TAKE-UP FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 626,161, dated May 30, 1899.

Application filed March 1, 1898. Serial No. 672,171. (No model.)

To all whom it may concern:

Be it known that I, AUSTIN JEROME HANKS, of Wilmington, in the county of Clinton and State of Ohio, have invented a new and Improved Let-Off and Take-Up for Looms, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved let-off and take-up for looms, whereby the warp is properly unwound or fed from the warp-beam and the woven cloth is wound up on the cloth-beam as fast as required at a uniform and proper tension.

The invention consists of novel features and parts and combinations of the same, as will be described hereinafter and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a cross-section of the same on the line 2 2 of Fig. 1, and Fig. 3 is a similar view of the same on the line 3 3 of Fig. 1.

The loom is provided with the usual warp-beam A, from which unwinds the warp, and a cloth-beam B, on which the woven cloth is wound up. Both beams A and B are simultaneously actuated from the lay C of the loom, said lay being provided for this purpose near its fulcrum end with an angularly-extending arm C', carrying a series of eyes C², arranged one alongside the other, one of the outermost eyes being connected with a cord E. The cord E extends upward and passes over pulleys F to the rear end of the loom to connect with an arm G, mounted to swing loosely on a worm-shaft H', journaled in suitable bearings attached to the frame of the loom. The arm G is provided with a spring-pressed pawl G', in mesh with a ratchet-wheel G², secured on the shaft H', so that upon the upstroke of the arm G the ratchet-wheel and the shaft H' are turned, while on the downstroke of said arm the ratchet-wheel remains stationary and its pawl G' glides over the teeth. The shaft H' is provided with a worm H, in mesh with a worm-wheel H², secured on the warp-beam A, so that when the shaft H' is turned the worm H and worm-wheel H² turn the warp-

beam A to unwind the warp. A similar connection is made between the arm C' and the cloth-beam B by the cord E', and a mechanism, as mentioned—that is, the cord E'—passes over pulleys F' to connect with an arm G³, fulcrumed loosely on a worm-shaft H³, carrying a worm H⁴, in mesh with a worm-wheel H⁵, secured on the cloth-beam B. The arm G³ is connected by a pawl G⁴ and ratchet-wheel G⁵ with said shaft H³, so that on the upstroke of the arm G³ the shaft is turned and the cloth-beam B is rotated simultaneously with the warp-beam A. It is evident, however, from the construction described that the warp-beam A is turned a greater distance than the cloth-beam B, as the connection of the cords E E' is at different points of the arm C', and consequently more stroke is given to the arm G than to the arm G³. As the two sets of worms and worm-wheels are alike in construction and size, it is evident that the different strokes given to the arms G and G³ cause a turning of the warp-beam and cloth-beam different distances.

As is well known, considerably more warp has to be unwound from the warp-beam when the amount of cloth wound up by the cloth-beam to each full stroke of the lay has the warp bound in by the woof in the usual manner. By connecting the cords E and E' with different eyes C² it is evident that any desired amount of feed can be given to the warp-beam A and the cloth-beam B, according to the nature of the warp and woof material forming the cloth.

The downward-swinging movement of the ratchet-arm G is limited by a stop-pin I on the frame of the loom to reduce the stroke of the arm G relative to that of the arm G³.

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

1. The combination with the warp, and cloth beams, of a lay provided with an angularly-extending arm rigidly secured thereto and independent of the mechanism for operating it, a shaft geared with each beam, a pawl-and-ratchet mechanism for operating each shaft, and flexible connections between the arm of the lay and the pawl-and-ratchet mechanisms, the said flexible connections being secured to the free end of the arm of the

lay at different points, whereby the beams will be simultaneously and positively operated from the lay and one beam will be turned a greater distance than the other, as and for the purpose set forth.

2. The combination with a warp-beam, and a cloth-beam, of a lay provided with an angularly-extending arm rigidly secured thereto and independent of the mechanism for operating it, a shaft geared with each beam, a pawl-and-ratchet mechanism for turning each shaft, loosely-mounted arms carrying the pawls of the pawl-and-ratchet mechanism, and cords secured to the pawl-carrying arms, passed over guides, and secured to the free end of the lay-arm at different points, substantially as and for the purpose specified.

3. The combination with a warp-beam, and a cloth-beam, of a lay having an angularly-extending arm rigidly secured thereto at its fulcrum end, said arm being independent of the lay-operating mechanism and provided with a plurality of eyes at its free end, a shaft geared with each beam, a ratchet-wheel on each shaft, an arm loosely mounted on each shaft and carrying a pawl engaging the ratchet-wheel, and cords, one secured to each pawl-carrying arm, passed over guides, and secured to the eyes of the lay-arm, substantially as herein shown and described.

AUSTIN JEROME HANKS.

Witnesses:

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