

**No. 652,303.**

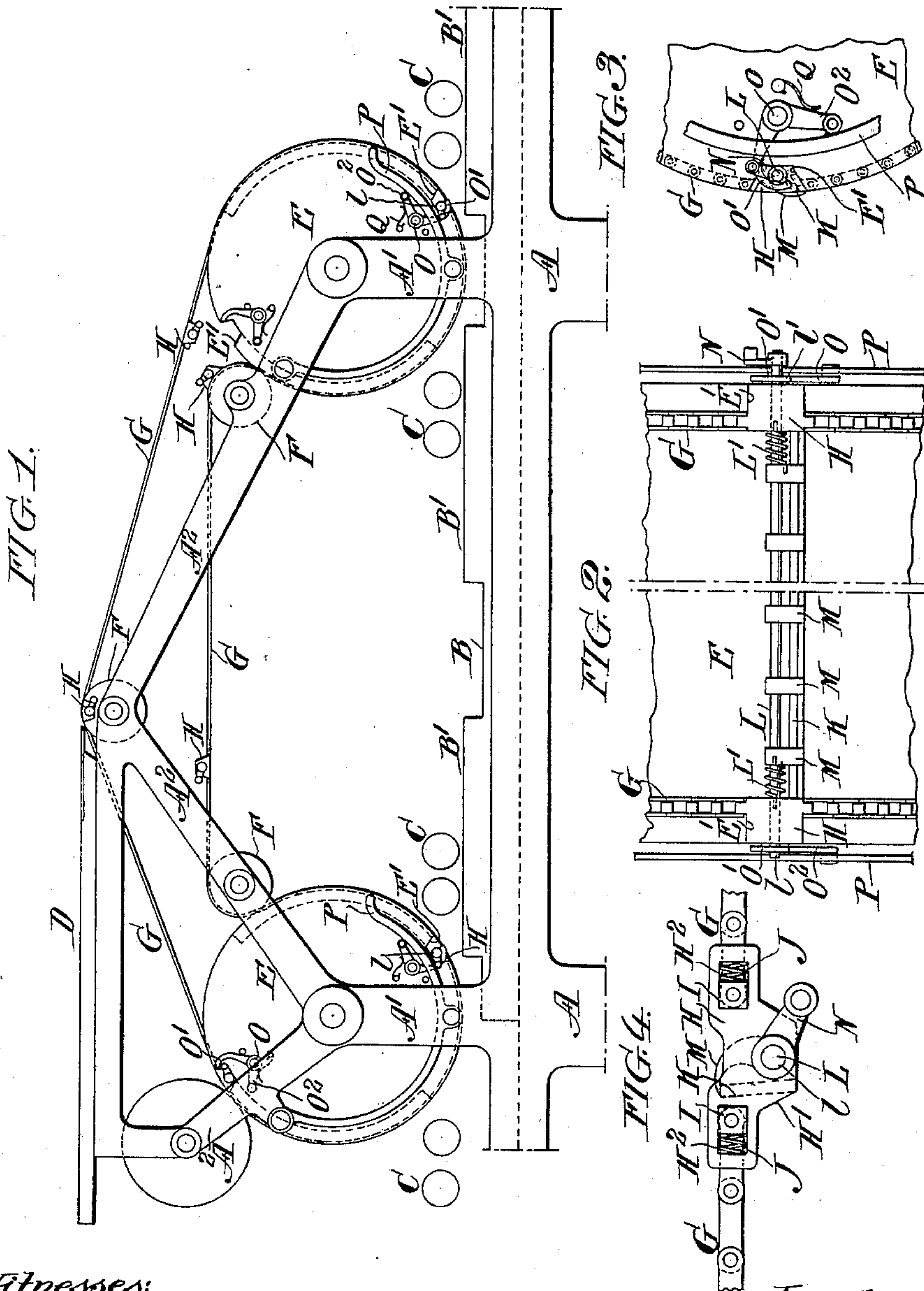
**Patented June 26, 1900.**

**W. H. R. TOYE.**  
**PRINTING PRESS.**

(Application filed July 12, 1898.)

(No Model.)

**2 Sheets—Sheet 1.**



Witnesses:

Henry Denny  
of  
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*Inventor:*

William H. R. Joyce  
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W. H. R. TOYE.  
PRINTING PRESS.

(Application filed July 12, 1898.)

(No Model.)

2 Sheets—Sheet 2.

FIG. 6.

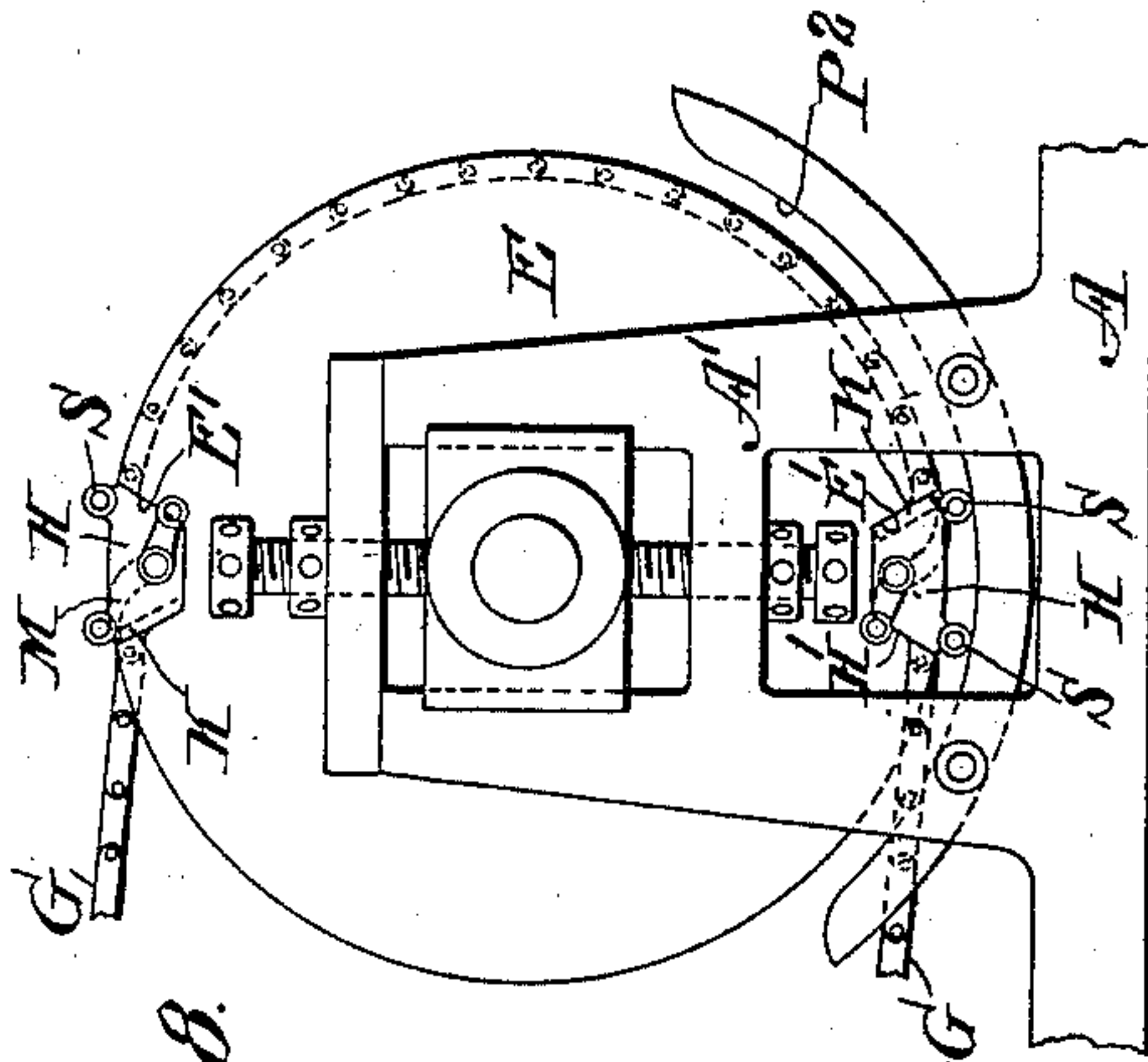
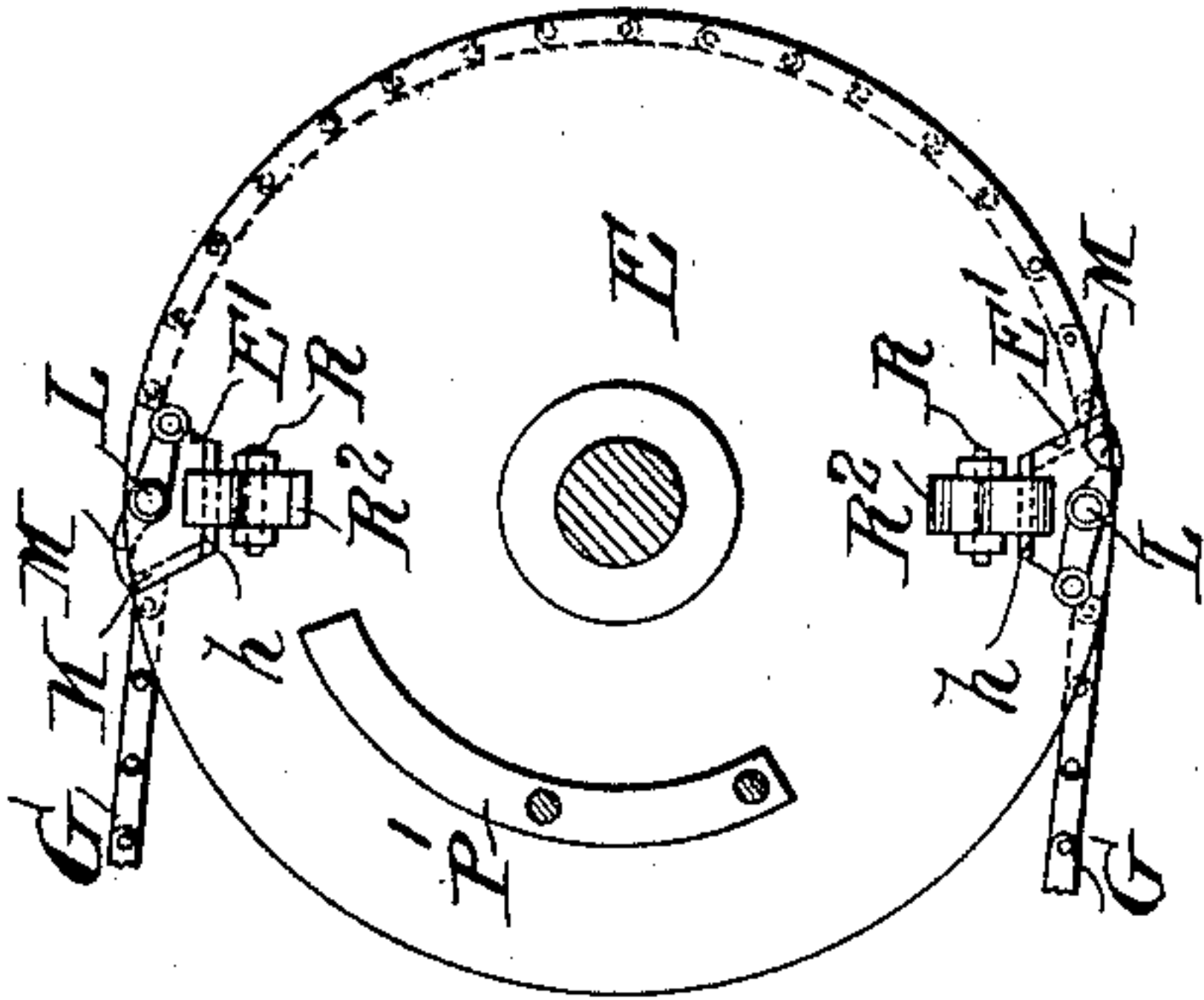


FIG. 8.

FIG. 5.

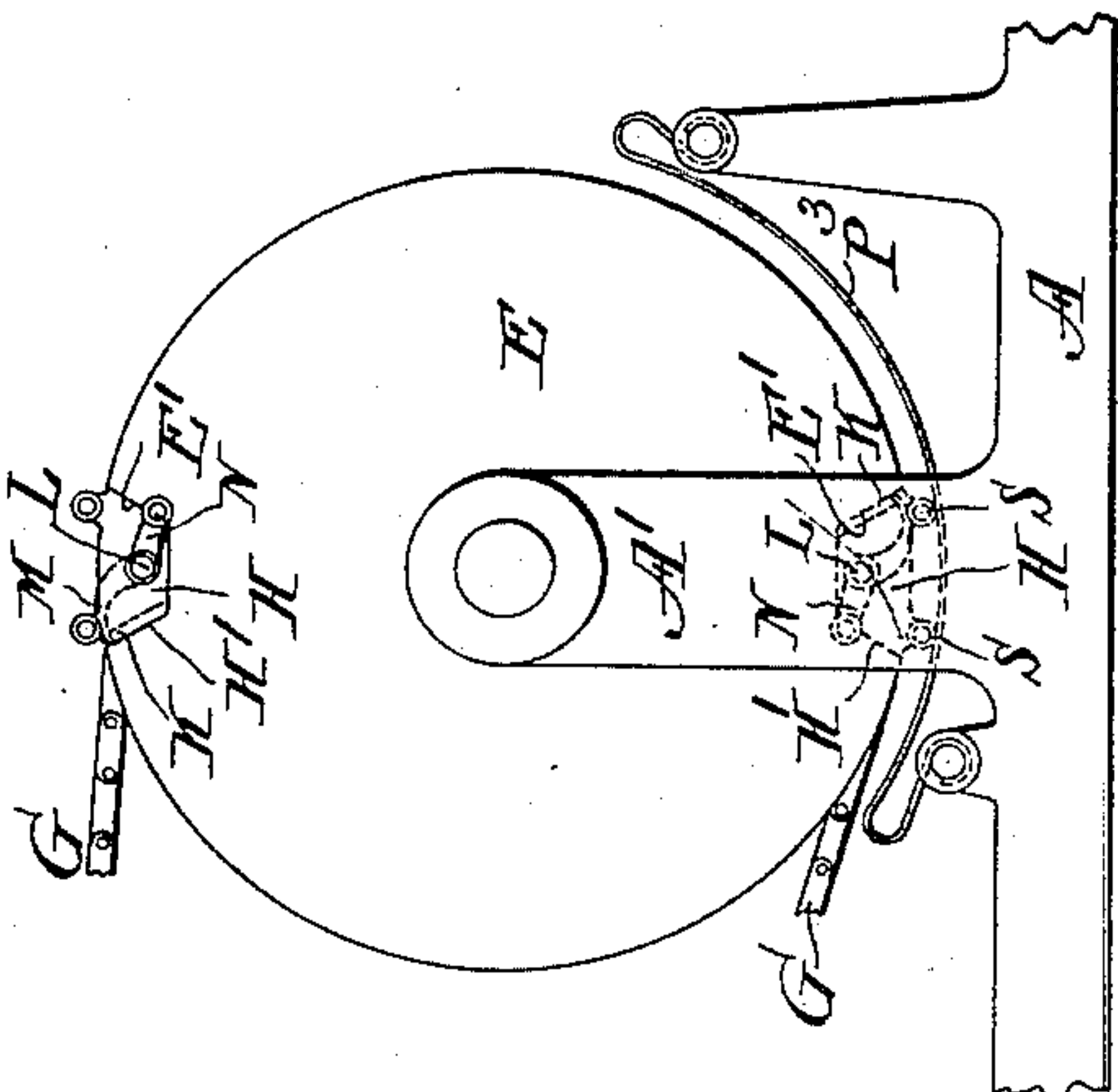
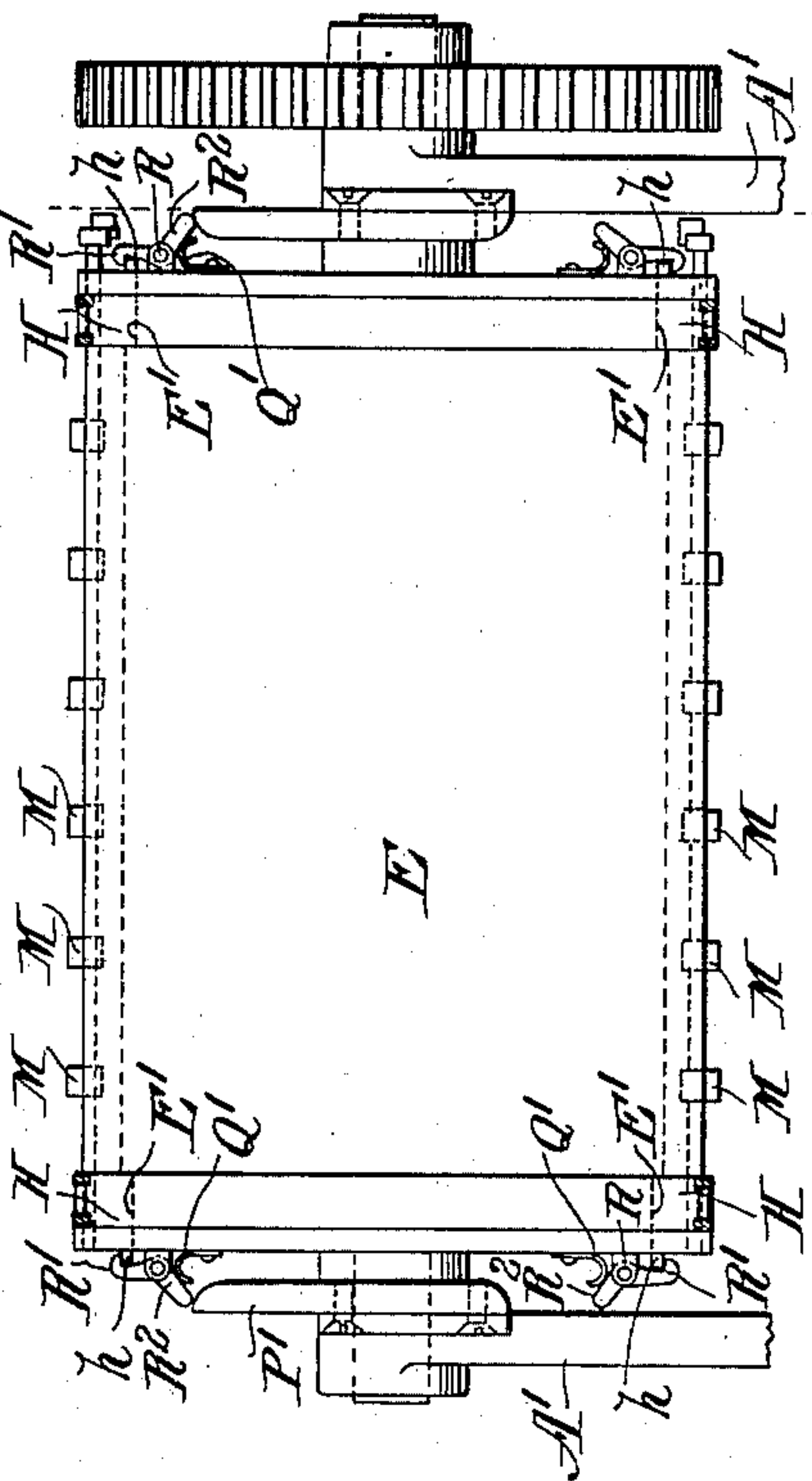


FIG. 7.

Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. R. TOYE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY  
DIRECT AND MESNE ASSIGNMENTS, TO THE MULTI-COLOUR PRINTING  
COMPANY, LIMITED, OF LONDON, ENGLAND.

## PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 652,303, dated June 26, 1900.

Application filed July 12, 1898. Serial No. 685,732. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. R. TOYE, a citizen of the United States of America, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Printing-Machines, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to printing-machines, and particularly to those machines, such as color-presses, in which a single sheet of paper is subjected to several impressions and in which consequently it is necessary that the registry of the paper with each couple should be as nearly the same as possible. In machines of this class flexible carriers to which the paper-nippers are attached have been advantageously used; but some difficulty has been met with in securing by their use an absolutely-correct and uniform registry of the nipper-bar with the recesses in the carrier-rolls, generally the ends of the impression-cylinders, formed to receive the blocks by which the nipper-bars are secured to the flexible carriers; and the object of my invention is to provide means for temporarily locking these blocks in the recesses of the rolls or cylinders, such means being preferably of a character which also forcibly and positively seats the blocks in the recesses, thus insuring that the blocks shall always be forced and held to their proper position with reference to the printing-couple acting upon the paper held by the nippers attached to such blocks. While the give of the chains or other flexible connections used will generally be sufficient to enable the blocks to seat themselves, I prefer to provide means for a certain definite yielding of the chains between adjacent nipper-bars, preferably making a yielding connection between the chains and the nipper-bar blocks, thus insuring a capacity of the blocks to adjust themselves to their recesses or seats under sufficient force.

Reference being now had to the drawings in which my invention is illustrated, Figure 1 is a side elevation of a press provided with my improvement. Fig. 2 is a plan view of a

portion of an impression-cylinder, showing a nipper-bar and attachments seated therein and held to place by my device. Fig. 3 is an end elevation of a portion of the impression-cylinder, showing my device. Fig. 4 is an enlarged view showing a nipper-bar block and my preferred device for attaching the chains thereto. Fig. 5 is a side elevation of an impression-cylinder, showing a modified device for holding the blocks in their recesses. Fig. 6 is an end view of the same modification; and Figs. 7 and 8 are end views of other cylinders, showing still other modifications of my invention.

A is the frame of the press, A' being standards upon which the impression-cylinders are supported, and A<sup>2</sup> A<sup>2</sup>, &c., Fig. 1, arms of the frame, supporting guide-rolls and other portions of the machine.

B is a reciprocating bed upon which type-forms B' B', &c., are secured.

C C, &c., are inking-rolls.

D is a table from which sheets are fed to the nippers.

E E are impression-rolls, the ends of which serve as carrier drums or rolls for the flexible carriers and have formed in them recesses E' in size and form adapted to make a neat fit with the nipper-bar blocks when the nipper-bars are in correct registry.

F F, &c., are guide-rolls for the flexible carriers G, upon which are secured the nipper-bar blocks H, &c., the portion H' of which fits nicely, as aforesaid, in the recesses E'. Preferably I form recesses H<sup>2</sup> H<sup>2</sup> in the blocks H, in which are blocks I I, to which the chain-sections are secured and which are held against the pull of the chains by springs J J.

K, Fig. 4, indicates the nipper-bar, extending between two blocks H, as does also the shaft L, to which are secured the nippers M M, &c., said nippers being normally held against bar K by springs L', but opened, when desired, by the action of cams or stops striking against lever-arms N, attached to shafts L.

Aside from the elastic connections between the blocks H and chains G the machine as hereinabove described is of familiar construction and is therefore only indicated in outline.

In the device as shown in Figs. 1, 2, and



3 I pivot on studs O bell-crank levers O' O<sup>2</sup>, the arms O' being hooked at their ends, so as to pass, as shown, over portions l and l' of the shaft L and draw the blocks H into the  
 5 recesses E'. The other arms O<sup>2</sup> of the levers are arranged at proper times to come in contact with cams P, which force the levers into operation and through them seat and hold the blocks in proper position, springs Q effecting a retraction of the levers when they  
 10 are released by the cams.

In Figs. 5 and 6 I have shown latches consisting of levers pivoted at R and having arms R', which when forced in engage and  
 15 hold projections h of blocks H and arms R<sup>2</sup>, arranged to be acted on by cams P', springs Q' serving to release the latch-levers. This device serves to hold the nipper-bar blocks in position, but is dependent on other constructive details or devices to seat the blocks  
 20 in their recesses E'.

In Figs. 7 and 8 I provide the blocks H with cam-rolls S S on their backs arranged to act in connection with cams P<sup>3</sup> or P<sup>2</sup>, which force  
 25 and hold the blocks in the recesses E' during the critical period. The cam P<sup>3</sup> is indicated as being formed of an elastic spring, which cam P<sup>2</sup> is solid and unyielding.

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

1. In a printing-machine, the combination with the printing-couples of a flexible carrier, as G G, having nipper-bar blocks, as H, secured to it, recesses, as E', formed in the rolls  
 35 over which the carriers pass, said recesses being adapted to receive and form a nice fit with the blocks H, latches secured to and moving with the recessed rolls as specified and  
 40 arranged to hold the blocks in the said recesses to secure a correct registry of the paper with the printing-couples, means for engaging said latches with the blocks at proper times and means for disengaging said latches.

45 2. In a printing-machine, the combination with the printing-couples of a flexible carrier,

as G G, having nipper-bar blocks, as H, secured to it, recesses, as E', formed in the rolls over which the carriers pass, said recesses being adapted to receive and form a nice fit  
 50 with the blocks H, and means, as specified, arranged to seat the blocks in the recesses E' and separate devices arranged to hold the blocks in the said recesses to secure a correct registry of the paper with the printing-  
 55 couples.

3. In a printing-machine, the combination with the printing-couples of a flexible carrier, as G G, having nipper-bar blocks, as H, secured to it by elastic connections, recesses, as  
 60 E', formed in the rolls over which the carriers pass, said recesses being adapted to receive and form a nice fit with the blocks H, and means, as specified, arranged to hold the blocks in the said recesses to secure a correct registry  
 65 of the paper with the printing-couples.

4. In a printing-machine, the combination with the printing-couples of a flexible carrier, as G G, having nipper-bar blocks, as H, secured to it by elastic connections, recesses,  
 70 as E', formed in the rolls over which the carriers pass, said recesses being adapted to receive and form a nice fit with the blocks H, and means, as specified, arranged to seat and hold the blocks in the said recesses to secure  
 75 a correct registry of the paper with the printing-couples.

5. In a printing-machine, the combination with the printing-couples of a flexible carrier, as G G, having nipper-bar blocks, as H, secured to it and made elastic between adjacent  
 80 blocks, recesses, as E', formed in the rolls over which the carriers pass, said recesses being adapted to receive and form a nice fit with the blocks H, and means, as specified,  
 85 arranged to hold the blocks in the said recesses to secure a correct registry of the paper with the printing-couples.

WM. H. R. TOYE.

Witnesses:

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 D. STEWART.