

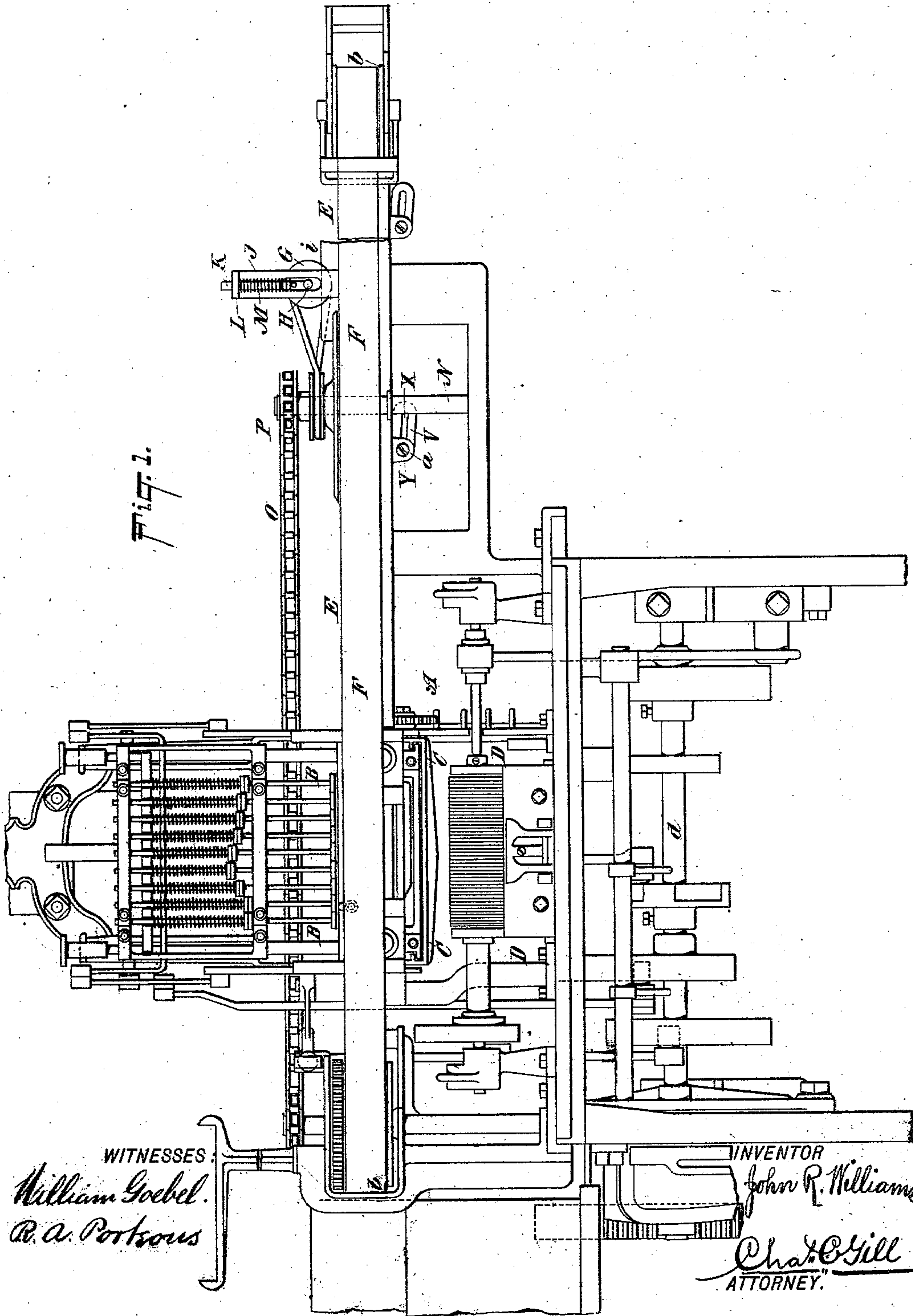
(No Model.)

3 Sheets—Sheet 1.

J. R. WILLIAMS.
CIGAR BUNCHING MACHINE.

No. 548,686.

Patented Oct. 29, 1895.



WITNESSES
William Goebel.
R. A. Porteous

INVENTOR
John R. Williams
Chas. O. Gill
ATTORNEY.

3 Sheets—Sheet 2.

No. 548,686.

Patented Oct. 29, 1895.

Fig. 2.

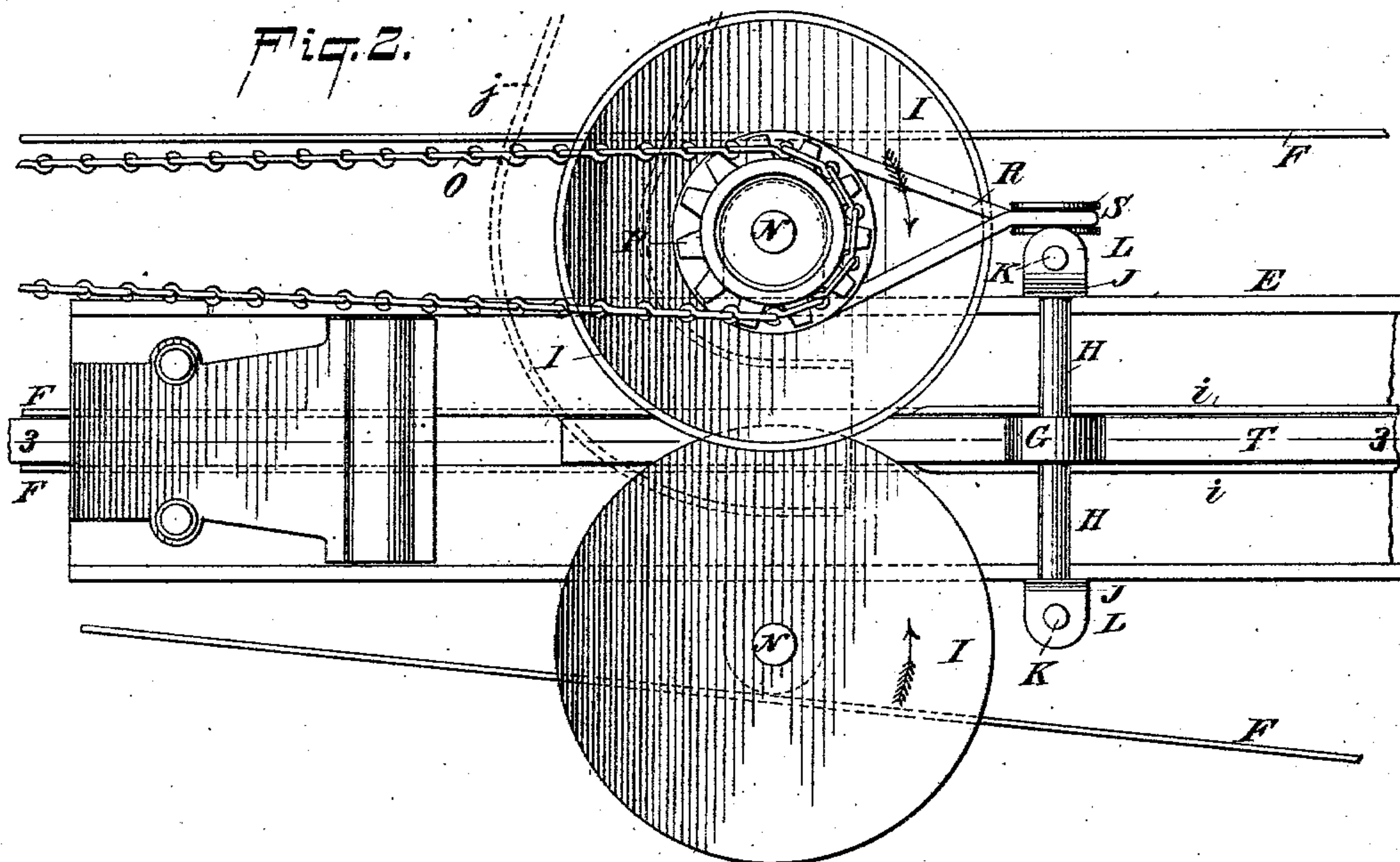
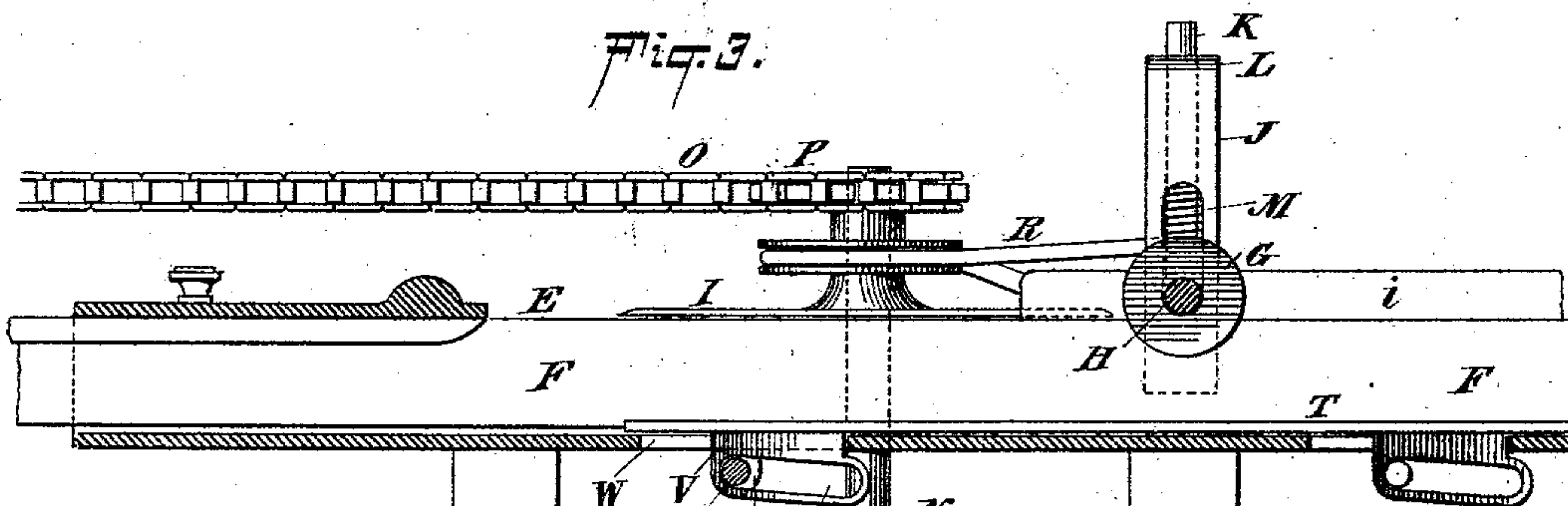


Fig. 3.



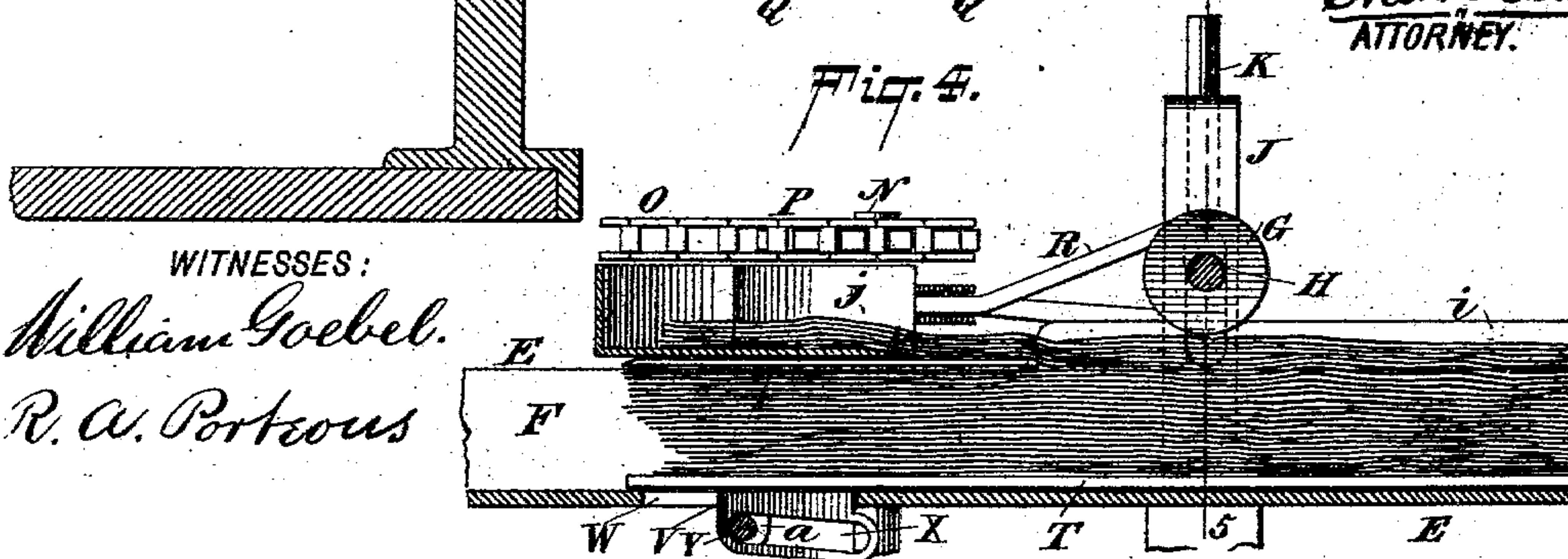
INVENTOR.

John R. Williams,

81

Chas. B. Gill
ATTORNEY.

Fig. 4.



WITNESSES :

William Goebel.

R. A. Porteous

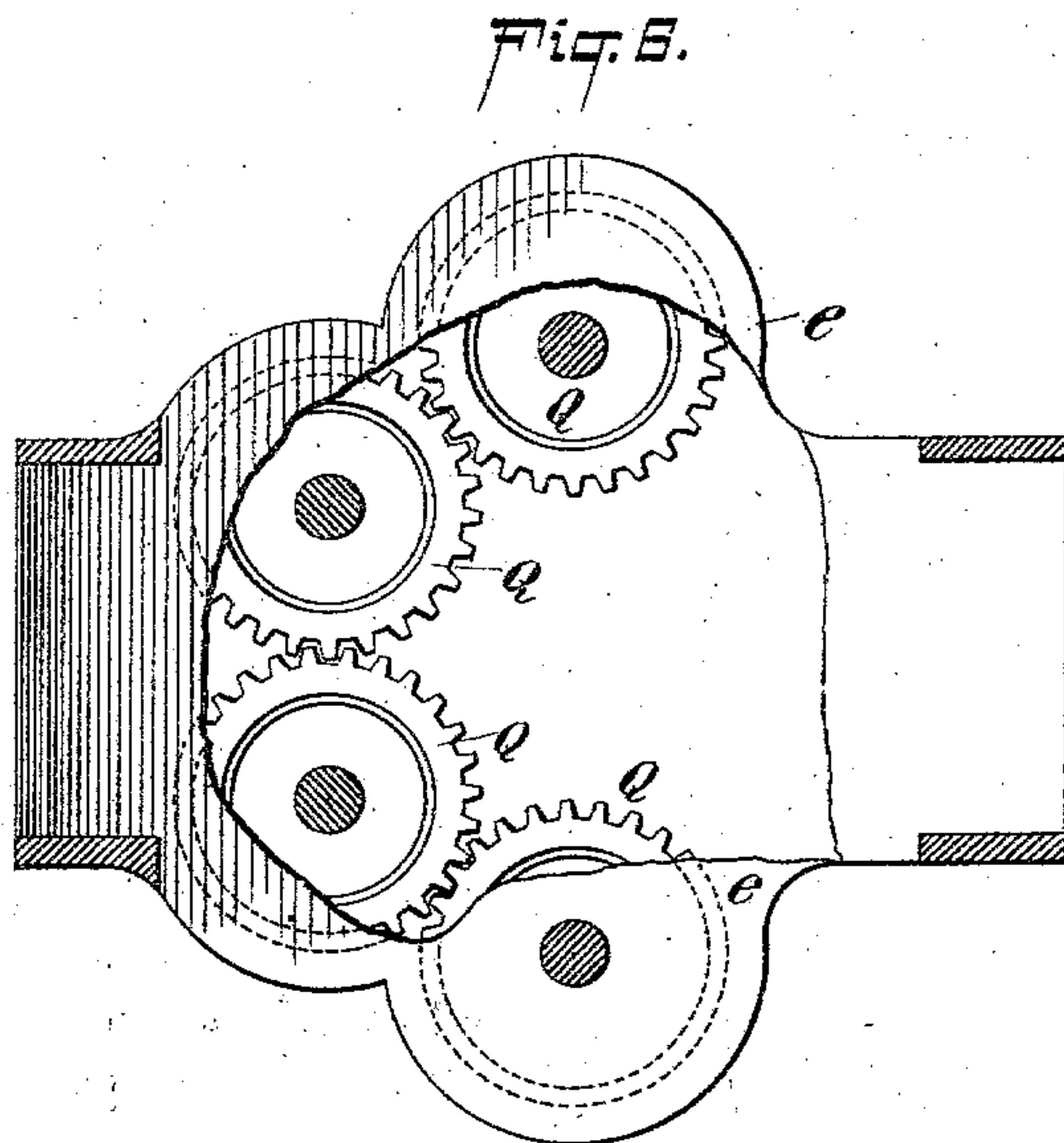
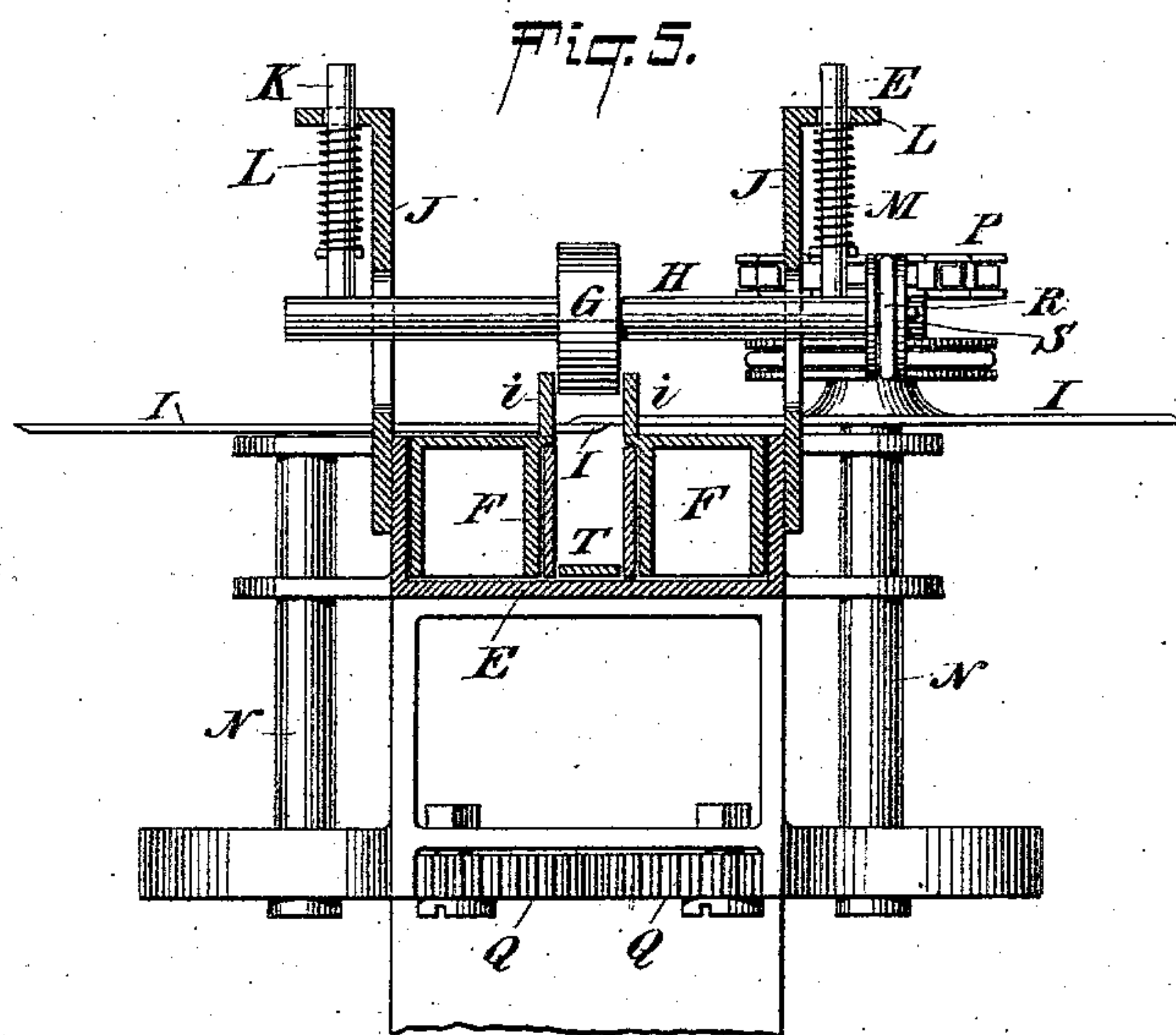
(No Model.)

3 Sheets—Sheet 3.

J. R. WILLIAMS.
CIGAR BUNCHING MACHINE.

No. 548,686.

Patented Oct. 29, 1895.



WITNESSES:

William Goebel.
R. A. Porteous

INVENTOR

John R. Williams
BY
Chas. C. Gill
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN R. WILLIAMS, OF NEWARK, NEW JERSEY.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 548,686, dated October 29, 1895.

Application filed January 27, 1892. Serial No. 419,401. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. WILLIAMS, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Cigar-Bunching Machines, of which the following is a specification.

The invention relates to improvements in cigar-bunching machines; and it consists in the features hereinafter described, and particularly pointed out in the claims.

I have illustrated the invention as applied to the cigar-bunching machine shown and described in Letters Patent of the United States No. 422,000, granted to me on the 25th day of February, 1890, and in Letters Patent No. 442,278, granted to me December 9, 1890. In the last-mentioned patent will be found a feed-trough in which by means of conveyer-belts the leaf-tobacco is moved along to a series of yielding plungers, which drive definite charges of the tobacco downward to a charge-box, which conveys them to the bunch-forming mechanism, and in said patent, particularly in Figures 9 to 13, inclusive, is shown an arrangement of devices by which when an undue quantity of the tobacco is fed to the trough an alarm will be sounded and the attendant thereby warned of the excessive quantity of tobacco in the trough.

My present invention consists in automatic mechanism, particularly specified in the claims, by which the surplus quantity of tobacco fed to the trough will be removed and separated from the main body of tobacco in the trough, thus leaving the tobacco being fed to the plungers and bunch-rolling mechanism uniform in quantity.

The particular nature of the invention will be more fully understood from the detail description hereinafter presented, reference being had to the accompanying drawings, in which—

Fig. 1 is a front elevation of a cigar-bunching machine employing a feed-trough and having the regulator made the subject of this application applied thereto. Fig. 2 is a top view, on an enlarged scale, of a portion of said feed-trough, and illustrating the application of the automatic regulator. Fig. 3 is an enlarged longitudinal section of same on the

dotted line 3 3 of Fig. 2. Fig. 4 is a like view of same, showing the tobacco in the trough and the operation of the regulator in removing the surplus quantity therefrom. Fig. 5 is an enlarged transverse section of same on the dotted line 5 5 of Fig. 4; and Fig. 6 is a plan view, partly broken away, of certain gearing by which motion is communicated to the shafts of the regulator carrying the knives for severing the surplus tobacco from the main body thereof, moving along the trough to the plungers and bunch-forming mechanism.

In the drawings, A designates a cigar-bunching machine of the character illustrated in my aforesaid Patents Nos. 422,000 and 442,278, and in which B designates the series of yielding pressers, and C, a vertically-reciprocating charge-box by which the separate charges of tobacco are carried downward to the bunch-forming mechanism D.

The tobacco for the bunches is fed into the right-hand end of the feed-trough E by hand, and is thence carried along said trough by means of the endless traveling belts F to a point at which the yielding pressers B may act upon it.

The feed-trough, having the belts F F, is fully illustrated in my aforesaid Letters Patent No. 442,278, and is hence not sought to be independently claimed herein.

The feed-trough (lettered E) extends to the right a sufficient distance to enable the operator to conveniently place the leaves of tobacco thereon, and the belts F F by an intermittent motion move the body of tobacco along the trough to the pressers B.

Intermediate the right-hand end of the trough and the pressers B, I provide the regulator for controlling the feed, and which is made the subject of this application. The said automatic regulator consists, essentially, of the roller G, mounted upon the shaft H, having adjustable bearings, and the revolving cutters I, which are horizontal and have their cutting-edges centrally over the longitudinal center of the trough E. Upon opposite sides of the main body of the trough E are provided the standards J J, which are slotted to receive and permit a vertical movement of the ends of the transverse shaft H, which carries the roller G at its center and at its ends is in

contact with the spindles K, extending upward through apertures in the ears L, formed upon the upper ends of the standards J. The spindles K are provided with the coiled springs M, which exert a downward tension upon the shaft H and roller G, thereby causing the latter to have a bearing upon the upper surface of the body of tobacco moving along the trough E. The roller G is free to be moved upward by the body of tobacco passing beneath it when the quantity thereof is sufficient to overcome the tension of the springs M, and in practice it is intended that the body of tobacco being fed along the trough shall completely fill the same up to the upper edges of the conveyer-belts F and that the tension of the springs M shall be sufficient to permit the elevation of the roller G so that its lower edge will be on a line with the upper edge of the belts F F without said roller having an undue pressure on the body of tobacco. While the tobacco moving along the trough completely fills the same up to the upper edges of the belts F F, the knives I I will revolve, but perform no further function, since at such time there would not be an undue quantity of tobacco in the feed-trough and hence there would be no surplus to be removed. Should, however, an undue quantity of the tobacco be fed into the right-hand end of the trough E, so that the body thereof should arise in the trough E above the belts F F, the roller G would be pressed upward beyond its normal position, as illustrated in Fig. 4, and that part of the tobacco above the upper edges of said belts would come into contact with and be severed by the knives I I. The knives I I are mounted upon the shafts N, and one of said shafts receives its revolving motion by means of the chain O and sprocket-wheel P, while the other of said shafts N receives its motion from the first-mentioned shaft through the chain of gear-wheels Q, (illustrated more particularly in Figs. 3 and 6,) and the knives I I have, therefore, a simultaneous motion, and this motion is communicated from the shaft N to the shaft H through the medium of the cord or belt R and wheel S, the latter being mounted upon the end of the shaft H.

It will be seen from the foregoing description that the body of tobacco moved by means of the belts F F along the trough E to the plungers B and bunch-forming mechanism is kept uniform by means of the knives I I and that it is intended that the proper quantity of tobacco constituting said body shall fill the trough E up to the upper edges of the belts F. In order, however, that the quantity of tobacco moving along the trough E between the belts F may be regulated in accordance with the size of the bunches to be formed, there is provided in the base of the said trough a vertically-adjustable bottom T, by which the depth of the trough may be controlled to meet the requirements of the tobacco moving through it. The bottom T is more clearly seen in Figs. 2 and 3, and consists of a lon-

itudinal plate equal in width to the space between the belts F F and having at its lower side the lugs V, extending downward through the openings W in the main body of the trough and being provided with the inclined slots X, through which the set-screws Y pass, said set-screws being carried by rigid lugs a, extending downward from the trough. The position of the bottom T in Fig. 3 is such as to allow the largest quantity of tobacco to be carried by the belts F to the plungers B and bunch-forming mechanism; but when it is desired that a smaller quantity of tobacco shall be carried by said belts for the formation of bunches of smaller size the bottom T will be moved toward the left, thus causing the elongated slots S to ride upward on the set-screws Y and resulting in the uniform elevation of the bottom T above the bottom proper of the trough E and reducing the space below the upper edges of the belts F, through which the body of tobacco is carried. Prior to adjusting the bottom T upward between the belts F it will be necessary to loosen the screws Y, and then, in order that the bottom T in its elevated position may be held secure, it will be necessary to tighten the screws Y. It will not be necessary to extend the bottom T to the left beyond the knives I, since the quantity of tobacco will be controlled and determined prior to its passage to the left of the said knives.

The belts F F move upon band-wheels b at opposite ends of the machine and receive their motion from the main driving-shaft thereof through intermediate gearing, as described in my aforesaid Letters Patent No. 442,278.

The gearing Q (illustrated more particularly in Fig. 6) will preferably be inclosed by a box e, of appropriate outline; but said box e forms no part of the invention herein claimed.

In the operation of the invention, the machine being set in motion, the leaves of tobacco for the cigar-bunches are placed with their ends lapping each other in the right-hand end of the trough E and between the belts F F, which, being in motion, will convey the body of tobacco, constantly supplied by fresh additions at the right-hand end of the trough E, toward the plungers B and bunch-forming mechanism D, the said body of tobacco being carried beneath the roller G and knives I. Should the proper quantity of tobacco be within the trough E and between the belts F F, the knives I will perform no function further than revolving, while the roller G exerts a sufficient pressure to press the tobacco in compact form.

It will be observed upon reference to Fig. 3 that the roller G when at rest extends downward a slight distance into the space between the belts F, and hence when the body of tobacco is moving along the trough E and completely fills said space the roller G will be elevated to a point at which its lower edge is in line with the upper edge of the belts

F, and thus the tension of the springs M will cause said roller to have a proper pressure upon the body of tobacco. When, however, owing to the irregularities of feeding additional quantities of tobacco into the right-hand end of the trough E, the body thereof moving between the belts F is such as to elevate the roller G above the upper edges of the belts F, the knives I I, revolving toward each other, will, as indicated in Fig. 4, sever the excessive quantity of tobacco, leaving the main portion thereof just filling the space between the belts F F. During the operation of the knives I I in severing the surplus quantity of tobacco from the main body thereof between the belts F the roller G will, through its increased pressure upon the tobacco, owing to the extra compression of the springs M, firmly bind upon the tobacco in advance of the knives I I and thereby facilitate the operation of the latter in severing the upper strata of the same. In order that the tobacco rising above the upper edge of the belts F F may be kept in line, I have provided the plates *i i*, which extend upward on the same vertical planes as the belts F F and form a channel through which such tobacco may move and be brought directly beneath the roller G and in contact with the cutting-edges of the knives I. It is desirable that the surplus quantity of tobacco removed by means of the knives I I may be automatically directed from the machine, and to this end I have provided above said knives the box or trough *j*, into which the tobacco passes after being severed by the cutting-edges of the knives I I. I prefer that the box *j* shall be inclined or curved, so that the tobacco entering the same will move outward to one side of the knives I I in convenient position to be entirely withdrawn from the machine. After the main body of tobacco has passed beneath the knives I I it will continue

to be carried by the belts F F on its passage to the plungers B, whereat, as fully described in my aforesaid Patent No. 442,278, it is subdivided into appropriate charges for the bunches to be formed.

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

1. In combination with a cigar machine, the feed trough having the conveyer belts for moving the body of tobacco to the machine proper, and the vertically adjustable bottom between said belts for regulating the depth of the trough; substantially as and for the purposes set forth.

2. In combination with a cigar machine, the feed trough having the conveyer belts, the adjustable bottom between said belts, and the revolving knives whose cutting edges meet over and in close relation to the upper edges of said belts; substantially as set forth.

3. In combination with a cigar machine, the feed trough having the conveyer belts, the adjustable bottom between said belts, the revolving knives whose cutting edges meet over and in close relation to the upper edges of said belts, and the pressure roller bearing upon the body of tobacco adjacent to said cutting edges, substantially as set forth.

4. In combination with a cigar machine, the feed trough having the conveyer belts, and the adjustable bottom between said belts, said bottom having the lugs provided with the inclined elongated slots; substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 8th day of January, A. D. 1892.

JOHN R. WILLIAMS.

Witnesses:

CHAS. C. GILL,
ED. D. MILLER.