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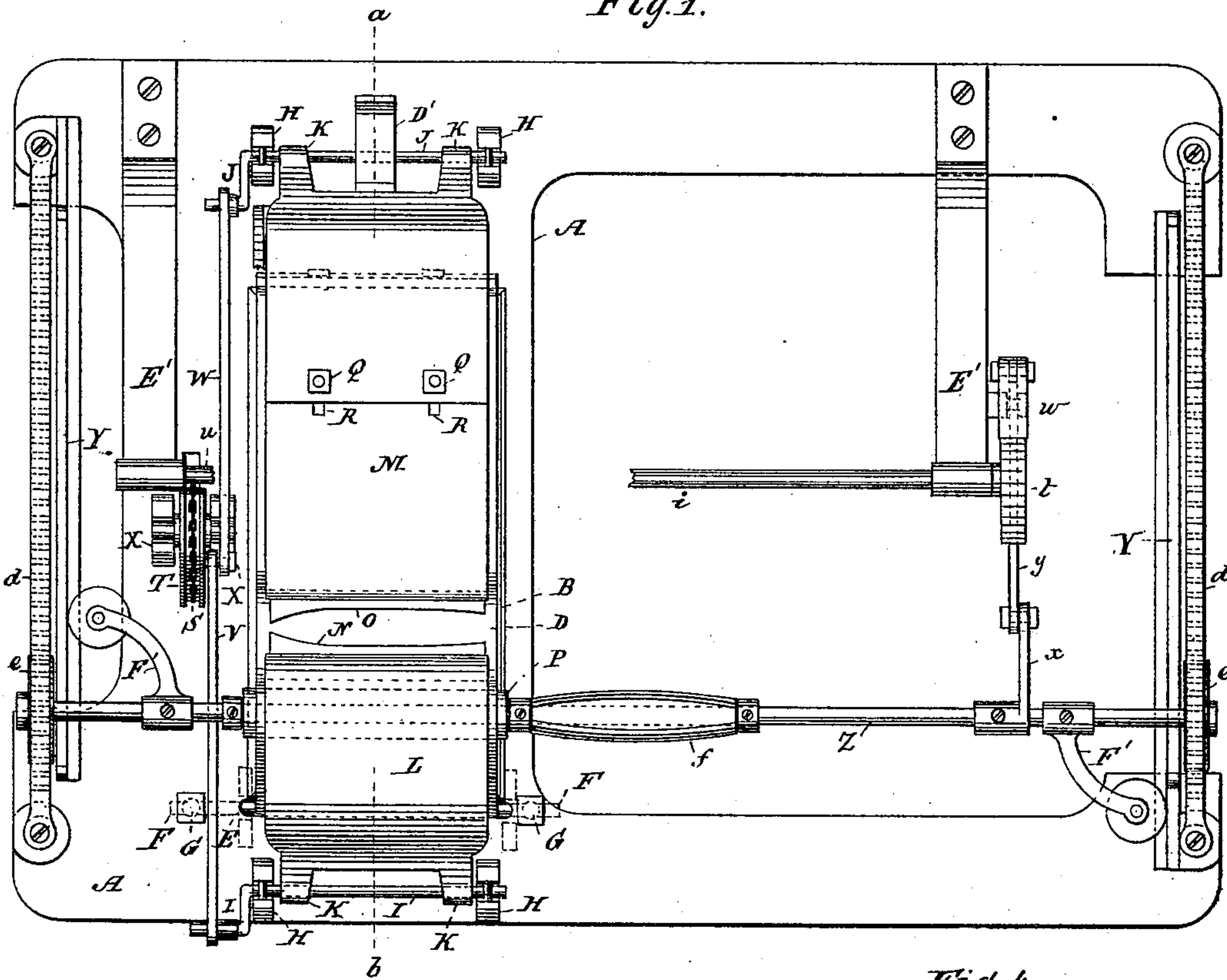
J. R. WILLIAMS.

CIGAR MACHINE.

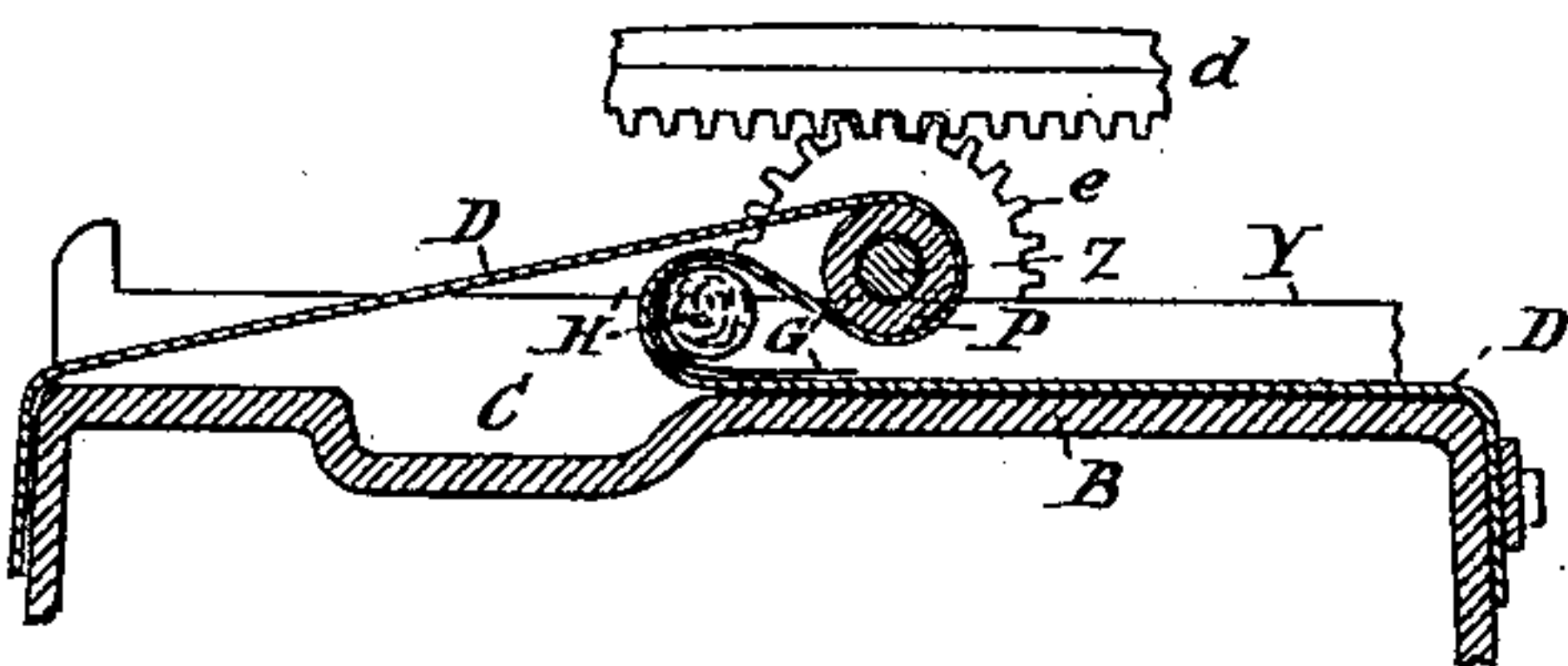
No. 353,907.

Patented Dec. 7, 1886.

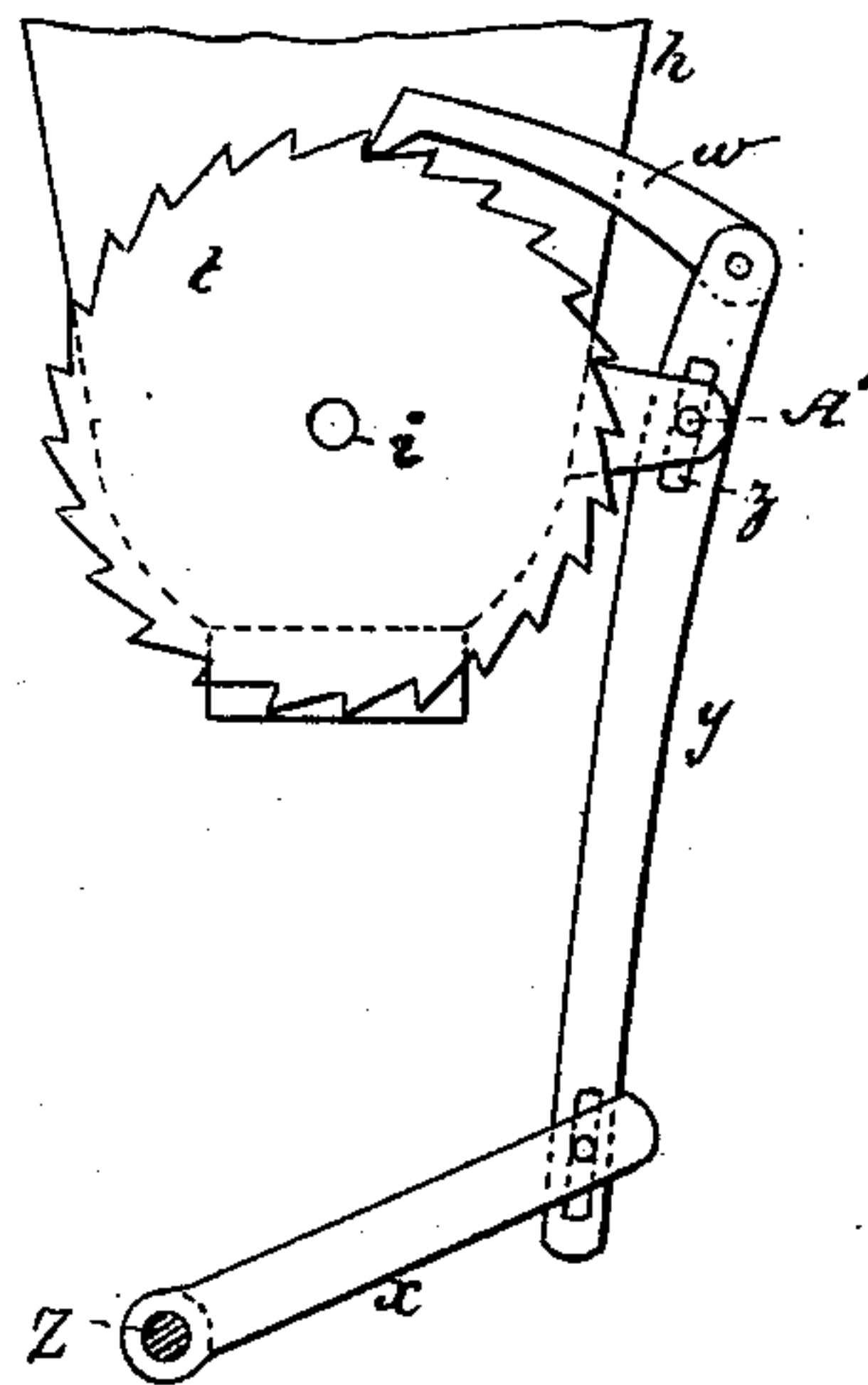
*Fig. 1.*



*Fig. 3.*



*Fig. 4.*



WITNESSES:

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William B. Ellison

INVENTOR

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(No Model.)

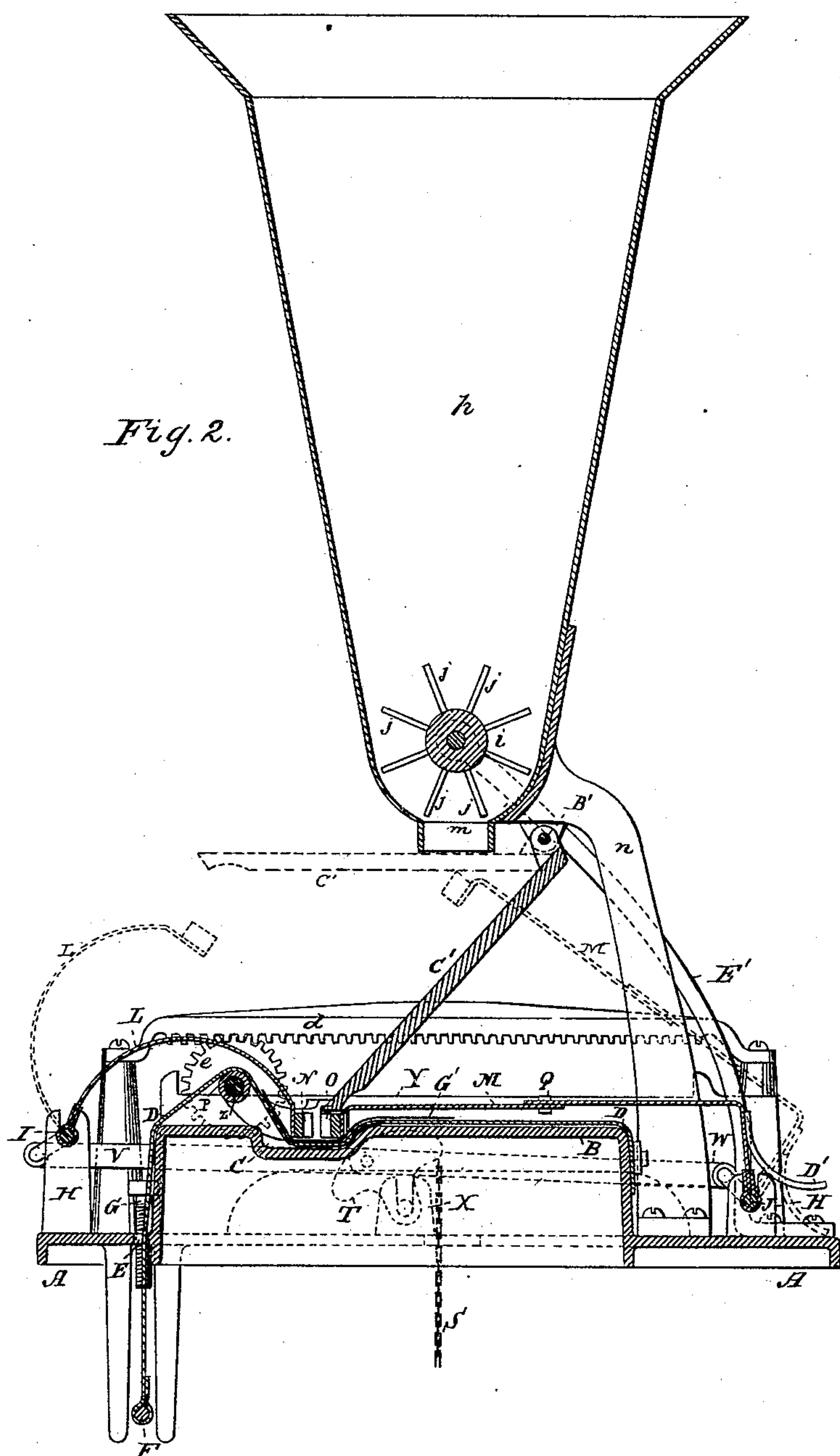
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# UNITED STATES PATENT OFFICE.

JOHN R. WILLIAMS, OF NEWARK, NEW JERSEY.

## CIGAR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 353,907, dated December 7, 1886.

Application filed February 6, 1886. Serial No. 190,963. (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-Machines, of which the following is a specification.

The invention relates to improvements in cigar-machines, and particularly in machines for forming and preparing the "bunch" to receive the ultimate wrapper.

The invention embraces mechanism for apportioning a quantity of tobacco into uniform charges or parts, successively delivering or directing said charges as formed into a sectional mold whose matrix is substantially in the outline of a cigar, and rolling the same in a "binder," all as hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top view of a machine embodying a substantial part of the invention, the means for apportioning the tobacco into uniform charges being omitted. Fig. 2 is a vertical section on the dotted line *a b* of Fig. 1, the apportioning mechanism being in this instance illustrated. Fig. 3 is a detached sectional view of the rolling table and apron, and showing a charge or "filler" of the tobacco in process of being formed into a bunch; and Fig. 4 is a detached side elevation of the pawl-and-ratchet mechanism for actuating the devices employed for subdividing the stock of tobacco.

In the drawings, A designates the bed-plate or base of the machine, which plate or base may be mounted upon a table of any suitable description, and will preferably be of cast metal. One part of the plate A is elevated above the surrounding portions thereof, and forms a rectangular table, B, having the transverse groove or seat C, and a flexible rolling apron, D, the rear end of which is firmly affixed to the rear portion of the table, while the front end passes downward through a slot, E, in the plate A and carries the metallic rod F, which serves as a tension for the apron, as hereinafter specified. The ends of the rod F project beyond the edges of the apron D in convenient position to come in contact, when

elevated, with the lower ends of the adjustable screw-stops G.

Directly in front and rear of the table B are mounted in standards H, the rock-shafts (lettered I J, respectively,) upon which are secured, by ears K, the sections L M of the mold. The sections L M are in the present instance of sheet metal, and have upon their inner ends the blocks N O, preferably of wood, one being on each section and the inner face of each which being formed in the outline of one side or half of a cigar. The section L is bowed upward at its center, to make room for the roller P, hereinafter described, and the section M is adjustable as to its length, being composed of two parts connected by bolts Q, passing through elongated slots R in one of the parts and close-fitting apertures in the other part. By adjusting the length of the section M the distance between the blocks N O may be regulated at will, according to the size of the cigar to be produced.

The sections L M may be elevated to the position shown by dotted lines in Fig. 2 by means of an ordinary foot treadle (not shown) acting through a chain, S, rocking segment T, and draw-rods V W, the inner ends of which are pivoted eccentrically on one face of the segment T, while their outer ends are secured on the crank ends of the rock-shafts I J. The segment T is journaled in bearings X, and the chain S passes over it and is rigidly secured to its front end.

When the sections L M are down on the table B, as shown in Figs. 1 and 2, their weight, acting through the shafts I J and rods V W, causes the segment to assume a position in which it is tilted slightly forward, and the inner ends of the rods V W are forward of its center of movement, as shown by dotted lines in Fig. 2, and when the pressure of the foot is exerted upon the said treadle (not shown) the chain will be drawn downward, and will at this time operate to tilt the segment T in the opposite direction and force the rods V W rearward, which movement imparts a rocking motion in opposite directions to the shafts I J, and thereby causes the elevation of the sections L M to the position indicated by dotted lines in Fig. 2. Upon the foot being removed



from the said treadle the sections L M by their own specific gravity will descend and return the segment, draw-rods, and rock-shafts to their former position.

5 Upon opposite sides of the plate A are ways Y, upon which the rod Z may have a reciprocating movement, and slightly beyond, and on a higher plane than the ways Y, are the inverted racks *d*, the downwardly-projecting  
10 teeth of which are engaged by the pinions *e*, secured on the ends of the rod Z. The ways Y serve to support the ends of the rod Z and to preserve the engagement of the racks *d* with the pinions *e* throughout the movement of the  
15 rod Z. The purpose of the racks *d* and pinions *e* is to cause the rotation of the rod Z during its reciprocating movement, which latter is imparted by hand, the power being applied to the loose sleeve *f*, located at about the center of the rod. Upon that portion of the rod Z located over the table B is the roller P, hereinbefore mentioned, which is of suitable form for rolling bunches, and is beneath the apron D.

25 In the foregoing part of the specification I have described all of the mechanism with the exception of that utilized for holding and feeding the filler-tobacco, and this consists of the superposed hopper *h*, in which the tobacco in quantity is placed, and the shaft *i*,  
30 having rows of pins *j* radiating therefrom at equal distances from each other, and located directly above the discharge-opening *m* in the bottom of the hopper, the width of the opening *m* being equal to the distance between the outer ends of any two rows of the pins *j*, as shown in Fig. 2. The lower portion of the hopper *h* in cross-section is about on a line with the half-circle described by the pins *j* on the lower half of the shaft *i*, the object being  
40 to permit no more tobacco to reach the opening *m* than may be contained between the two rows of pins *j*, directly encompassing it from above. The hopper *h* is secured over the section M upon a standard, *n*, and the shaft *i* in the hopper has an intermittent motion, in order that the tobacco may not be fed through the opening *m* more frequently than it may be rolled into bunches by the apron D.

50 Various kinds of mechanism may be adopted to impart a rotary intermittent motion to the shaft *i*; but in the present construction I prefer to employ the ratchet-wheel *t*, secured on one end of the shaft *i*, and the pawl *w*, engaging the ratchet and connected by pivotally-  
55 joined links *x y* with the reciprocating rod Z, as shown in Figs. 1 and 4. The link *y* has an elongated slot, *z*, through which the pin A', securing it in position, passes, the purpose of  
60 the slot being to allow certain lost motion in the link, in order that the pawl *w* may not rotate the shaft more frequently nor to a greater extent than necessary.

65 Directly in rear of and about on a line with the discharge-opening *m* in the hopper *h* is retained, upon a rod, B', the rear end of the incline C', the front end of which, when the ma-

chine is at rest, terminates at the front edge of the block O, secured to section M. The purpose of the incline C' is to direct the tobacco  
70 falling from the opening *m* into the space between the blocks N O when the sections L M are in their depressed position, and to close said opening when the said sections are in an elevated position, the upward movement of  
75 the section M operating to elevate the incline into a horizontal position against said opening, as denoted by dotted line in Fig. 2. The section M may have secured on its rear end a check, D', for the purpose of arresting its up-  
80 ward movement at the proper time.

The ends of the shaft *i* have bearings in the upper ends of the forwardly-inclined standards E', and the ends of the rod Z may, if found necessary, which will not usually be the case, be  
85 supplied with the oppositely-projecting spiders F', moving against the sides of ways Y to guard against any oscillation of said rod during its reciprocating motion.

In the operation of the machine the sections  
90 L M are moved to their elevated position by means of the treadle, as hereinbefore described, and a binder, G', placed on the apron D, over the transverse groove C, after which the foot will be removed from the treadle and  
95 the sections L M permitted to return to their former position, being that shown in full lines in Fig. 2. At this time the tobacco for the filler may be placed in the space (or matrix) between the blocks N O and upon the binder G',  
100 either by hand or by its sliding down the incline C', whereupon the sections L M and incline C' will be again elevated by the foot and the rod Z moved toward the rear end of the plate A, during which movement the roller P  
105 first passes over the tobacco, as shown in Fig. 3, as far as the slack in the front end of the apron D will permit, forming a bight or pocket, H', and then rolls the binder around and with the tobacco until the bunch has been formed  
110 and moved over the rear edge of the table B. During the rearward movement of the rod Z the links X Y operate, through the pawl *w* and ratchet *t*, to rotate the shaft *i* a definite distance and feed a charge of tobacco into the  
115 opening *m* and upon the incline C'. After the bunch has been moved over the rear edge of the table B it will be removed by hand, the rod Z will be drawn forward to its first position, another binder, G', placed on the apron D, and  
120 the pressure on the foot-treadle released, permitting the descent of the sections L M and incline C'. The tobacco which rested on the incline C' will, during the movement last described, have passed down the same into the  
125 space between the blocks N O and upon the binder G', in position to be rolled into a bunch by the succeeding rearward movement of the rod Z. During the rearward movement of the rod Z the incline is against  
130 the opening *m*, and a charge of tobacco is fed upon it, and during the forward or return movement of the rod Z the feed-shaft *i* remains stationary, in view of the fact that the



pawl *w* slides over the ratchet *t* without affecting it. The operation of forming the bunch may be repeated as rapidly as desired until the tobacco in the hopper *h* has been consumed, after which an additional supply of the tobacco may be furnished to the hopper, and the operation of the machine continued. During each return movement of the rod *Z* to the front edge of the table *B* the weight of the rod *F* operates to draw out the pocket *H'* and return the front edge of the apron *D* to its lowest position preparatory to the formation of another pocket around the succeeding charge of tobacco deposited upon it.

15 The size of the pocket or bight *H'*, formed in the apron *D*, will depend upon the point at which the ends of the rod *F* come in contact with the stops *G*. When the stops are elevated, more play will be allowed in the slack end of the apron, and consequently a larger pocket may be formed than when said stops are depressed and the free movement of the apron restricted; hence it is evident that the size of the pocket may be regulated at will, according to the size of the bunch to be produced.

The discharge-opening *m* is in the form of a spout or box projecting below the hopper *h*, and is of a size adapted to hold a sufficient quantity of tobacco for a single bunch; hence should the shaft *i* rotate farther than it ought during its intermittent motion, the opening *m* would catch and hold enough tobacco for the filler of a cigar, and the regular operation of the machine would not be disturbed.

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

1. In a cigar-machine, the rolling table and apron, combined with the roller, the mold composed of hinged sectional plates, forming between their meeting edges (which, when in use, rest upon said apron) the matrix for the cigar-filler, and suitable mechanism whereby the mold may be elevated from the apron, the said matrix having substantially vertical sides and being open above and below to receive the tobacco at its top and permit its escape through its bottom, substantially as set forth.

2. In a cigar-machine, the rolling table and apron, combined with the roller, and the mold composed of hinged sectional plates extending over the table and apron and forming between their meeting edges (which, when in use, rest upon said apron) the matrix for the cigar-filler, and one of said plates being adjustable as to its length, substantially as and for the purposes set forth.

3. In a bunching-machine, the rolling-table, the apron resting on said table, a mold composed of hinged sectional plates, and the roller combined with the elevated hopper, intermittent feed mechanism for the tobacco, the pivoted incline *C'*, and suitable connecting mechanism, substantially as and for the purposes set forth.

4. In a bunching-machine, the rolling-table, apron, roller, and stops for the apron, one end of the apron being firmly held and the other end carrying a rod whose ends are below the said stops, substantially as set forth.

5. The base-plate having at opposite sides the ways *Y* and inverted racks *d*, combined with the rod *Z*, carrying pinions *e*, and roller *P*, the table *B*, apron *D*, and hinged sections *L* *M*, forming the matrix between their meeting ends, substantially as set forth.

6. In a bunching-machine, the table *B*, apron *D*, and roller *P*, combined with the sections *L* *M*, rock-shafts *I* *J*, to which the sections are secured, the rocking segment *T*, and draw-rods *V* *W*, secured eccentrically at one end to the segment and at the other to the crank ends of the shafts *I* *J*, substantially as set forth.

7. In a bunching-machine, the rolling-table, the apron on said table, the mold composed of hinged sectional plates extending over the apron and the roller, combined with the elevated hopper, intermittent feed mechanism for the tobacco, and the pivoted incline *C'*, located over and arranged to be actuated by one of the hinged plates of the mold to either close the opening from the hopper or to direct the tobacco to the matrix of the mold, substantially as set forth.

8. In a bunching-machine, the hopper having the discharge *m* of a size adapted to hold a sufficient quantity of tobacco for a bunch, and the shaft *i*, carrying pins *j* within the hopper above said discharge, combined with the matrix formed of vertical sides and open at its top and bottom, an apron beneath said matrix, a reciprocating roller for forming the bunch, and mechanism for raising and lowering the two parts of the matrix, substantially as set forth.

9. In a bunching-machine, the table and the apron resting upon said table, combined with the reciprocating roller between said table and apron, the matrix resting upon said table to receive the filler-tobacco, and mechanism for raising and lowering the two parts of the matrix, said matrix being composed of the vertical sides *N* *O* in the outline of a cigar, and having a permanently-open top and a permanently-open bottom, the former to receive the tobacco while the matrix rests upon the table and the latter to permit its escape when the matrix is elevated therefrom, substantially as set forth.

Signed at New York, in the county and State of New York, this 3d day of February, A. D. 1886.

JOHN R. WILLIAMS.

Witnesses:

CHARLES C. GILL,  
EDWARD WOLFF.