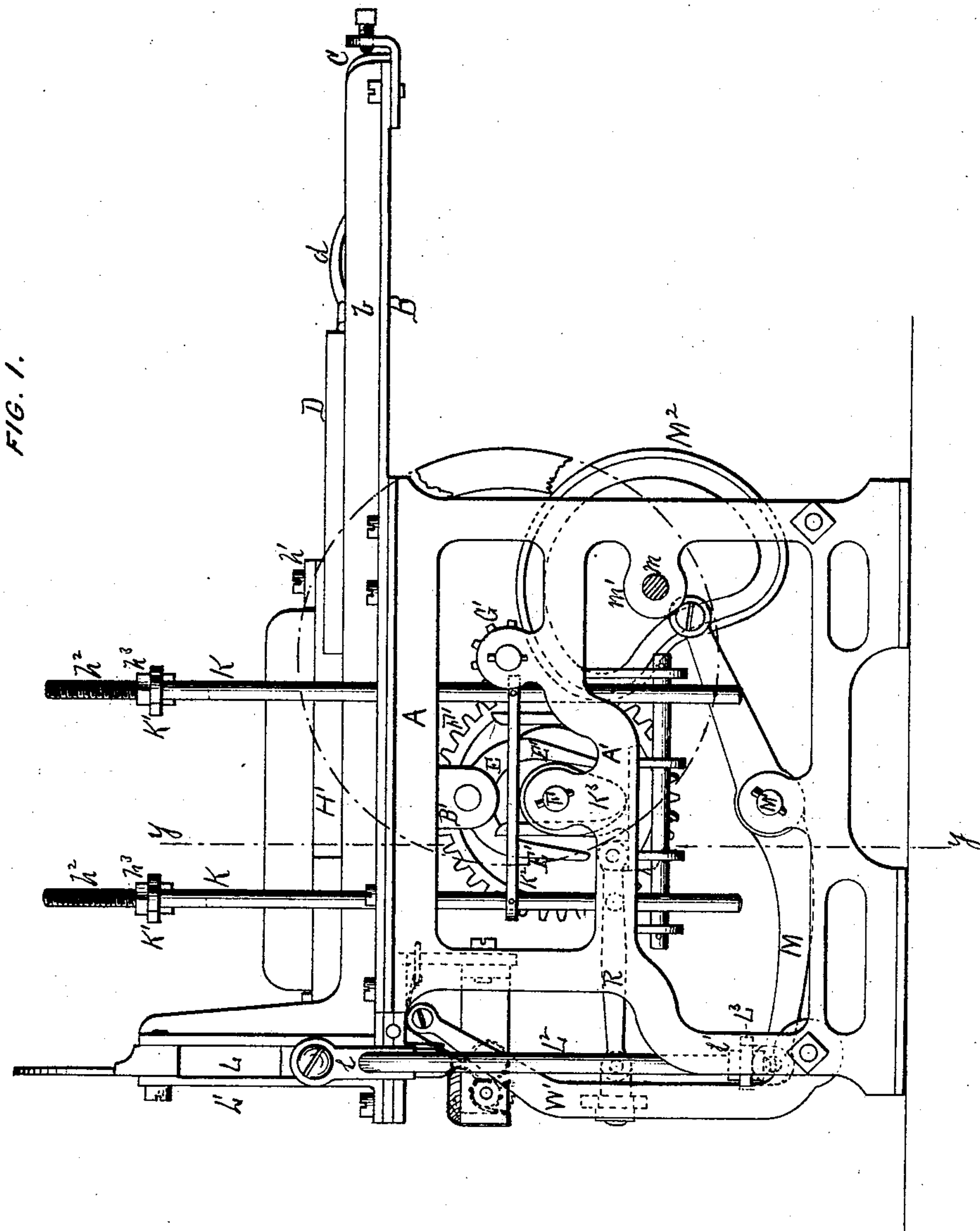


F. HAEHNEL.
Cigar Making-Machines.

No. 155,081.

Patented Sept. 15, 1874.



WITNESSES:

Edwin James

R. V. Gordon

INVENTOR:

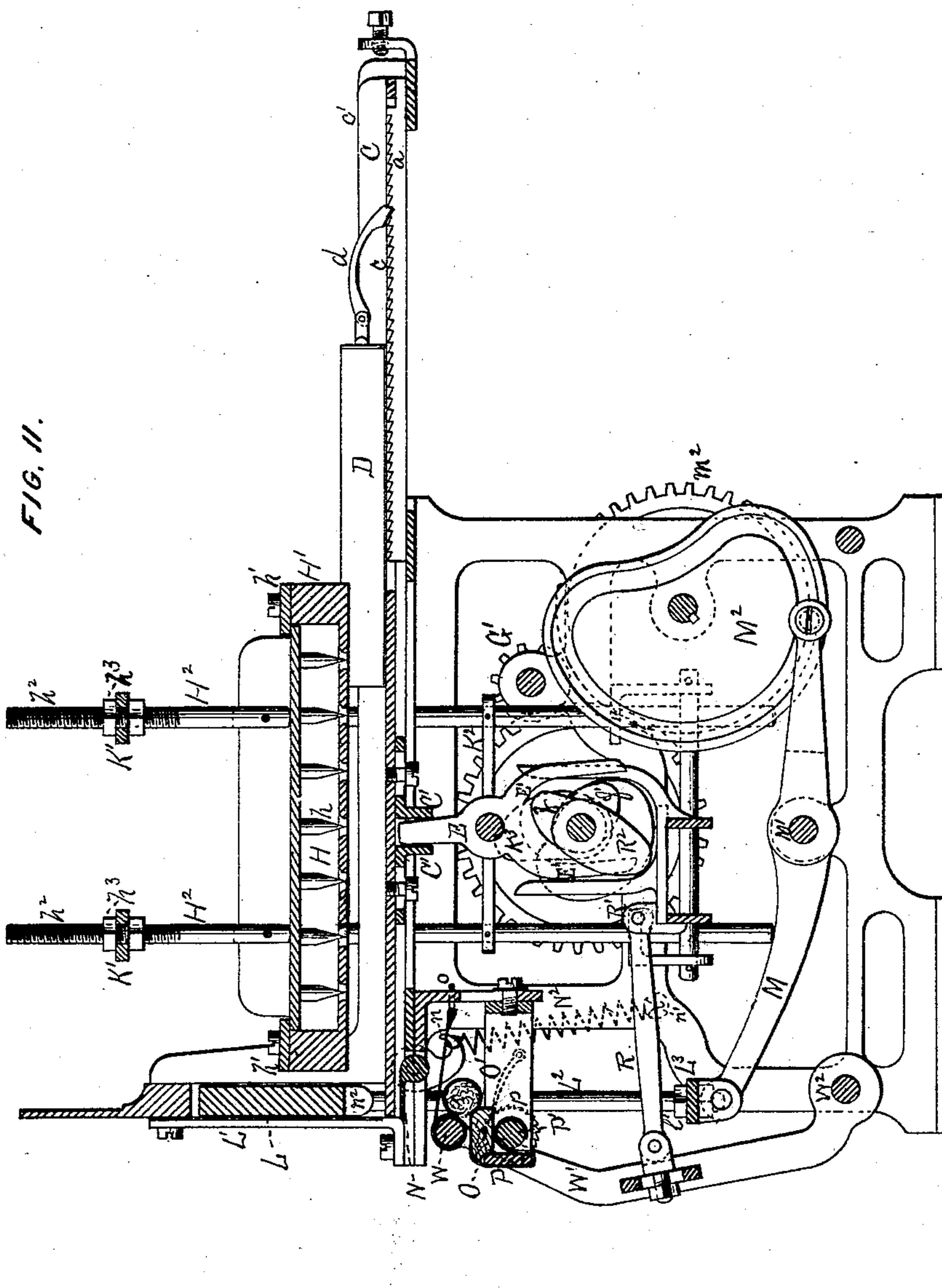
Frederic Haehnel.

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UNITED STATES PATENT OFFICE.

FREDERIC HAEHNEL, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN CIGAR-MAKING MACHINES.

Specification forming part of Letters Patent No. **155,081**, dated September 15, 1874; application filed September 8, 1874.

To all whom it may concern:

Be it known that I, FREDERIC HAEHNEL, of New Orleans, in the parish of Orleans and State of Louisiana, have invented an Improved Cigar-Making Machine, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing and the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a side view. Fig. 2 is a sectional view on the line *x x*, Fig. 3. Fig. 3 is a front view. Fig. 4 is a sectional view on the line *y y*, Fig. 1.

The nature of my invention consists, first, in the employment of a presser, provided with a series of stationary teeth projecting through its under face, and movable frame, which fits loosely around said presser, the same being so constructed and arranged that while the teeth shall so embed themselves in the tobacco which is used for the cigar-filling as to secure the same in a proper manner for the action of the knife, the frame shall, at the proper time, through its own gravity, drop and release or disengage the tobacco from the teeth, so as to permit the same to be conveyed to the wrapper.

My invention also consists in employing, in connection with said presser, a trough or feed-box, and which is provided with a pawl, which engages with a ratchet-rack secured at the center of a vibrating bed. Said bed receives its motion from an arm and cams so arranged as to impart to the same a forward and backward movement, and, through the agency of the ratchet-rack and pawl, the feed-trough is carried with it in its forward movements. In this trough is placed the tobacco that is to be used as the filling. As this trough passes under the presser the latter falls and embeds its teeth in the tobacco, as before stated, and as hereinafter fully described. I propose to use a series of these troughs of different dimensions, and which, in connection with the fact that the presser is secured to adjustable bearing-rods, permits me readily to arrange the machine so as, at pleasure, to manufacture cigars of any desired size.

My invention also consists, in combination with the foregoing devices, of a vertical knife and tilting plate, so arranged, in connection

with the feeding device, that as the knife separates and cuts off the desired quantity for a filling it shall also depress the plate and cause said filling to fall on the leaf designed to be used as the wrapper. The knife tilts the plate by overcoming the power of a spring secured to the axial shaft of the plate, and whose tension is constantly employed in retaining the plate in a true horizontal position, and in the same plane with the feeding device.

My invention also consists, in combination with the above features, in the employment of a stationary bed, belt, and vibrating frame, in which is secured a roller, the same being so combined and arranged that when the wrapper is placed over the table and on the belt to receive the filling the vibrating frame, at the proper time, is moved forward, so as to cause its roller to properly fold the wrapper around the filling, and thus the cigar is formed in a depression or cavity on the belt through the action of the vibrating frame and its roller. One end of this belt is secured on a suitable bearing, and the other end to a roller having its bearings under the bed. Said roller is provided with a ratchet and pawl, which permits the operator, at pleasure, to tighten or loosen the belt, so as to permit of the forming or wrapping of cigars of different sizes.

The construction and operation of my machine are as follows: On a frame, A, constructed of any suitable material, is secured a table, B. This table is formed in two sections and secured to the frame by screws or bolts, and is provided with parallel right-angled guide-bearings *b b*, between which rests and travels the vibrating bed C. At the center of this table B is a ratchet-rack, *a*, over which passes the slotted section *c* of the vibrating bed C. On this vibrating bed C, and between suitable guides *c' c'*, rests the feed trough or box D, and which contains the filling for the cigar. This trough D is provided with a pawl, *d*. This pawl *d* engages with the ratchet-rack *a*, and is automatically pushed toward the knife at the front of the machine through the forward movement of the bed C. E is a vibrating arm, and is journaled in suitable bearings B' B' on the under surface of the table B. The upper section of this arm E enters between bearing

plates or projections $C' C'$ on the under surface of the vibrating bed C , and by means of which a forward and backward movement is imparted to said bed as alternately the forked sections $E' E'$, in which the arm E terminates, are acted on by the cams $f f'$, keyed on the main power-shaft F , and which shaft is journaled in suitable bearings on a horizontal bar, A' , of the frame A . This shaft F is rotated or worked by means of a gear-wheel, F' , which engages with a ratchet-pinion, G^1 , on the driving-shaft G . Now, it will readily be seen that, when through the crank-handle g or other power motion is imparted to the wheel G^2 , the shaft G is revolved, and through it the ratchet-pinion G^1 imparts motion to the gear-wheel F' , which latter revolves the shaft F . The cams $f f'$, at or near the center of said shaft, alternately strike the forked sections $E' E'$ of the vibrating arm E , imparting a forward and backward movement to the vibrating bed C , and on its forward movement the feed-trough D , in which is placed the filling, is carried with it; but, owing to the fact that the pawl d engages with the rack a , the trough D is held, and its movement on the return of the bed C is prevented, and thus it will be seen that there is automatically fed for the action of the knife the quantity of filling which it is desired to separate or cut off. The filling in the trough or box D is held and secured in proper position to be cut off by the knife by means of the presser H . This presser H is constructed of any suitable material, and is provided with teeth $h h$, which project beyond its lower surface, as clearly shown in Figs. 2 and 4. This presser H is surrounded by a frame, H^1 , which fits loosely around said presser, and is supported on the upper surface of the same by bearing-plates $h^1 h^1$. This frame H^1 is composed of end plates and two parallel horizontal side plates. To the upper section of the presser H are secured two vertical bearing-rods, $H^2 H^2$, and which have cut on their upper section screw-threads $h^2 h^2$, and by means of which and the nuts $h^3 h^3$ they are not only secured on their bearings $K^1 K^1$, but are rendered adjustable thereon. These bars or plates $K^1 K^1$ connect the upper section of the rods $K K$. These rods have a vertical movement, and are secured and travel through openings $k k$ in the table B and bed A , and through guide-bearings $k' k'$, secured on the inner face of the cross-bars A' of the frame A . These rods, a short distance below the center of their length, are connected by horizontal bars or plates $K^2 K^2$, and which, in connection with the bars or plates $K^1 K^1$, forms, as it were, two open frame-bearings, and by means of which the presser H is worked. As the shaft F is revolved, the cams $K^3 K^3$, keyed at or near its opposite sections, elevate the plates $K^2 K^2$, and, of course, the rods $K K$, and their upper connecting-plates $K^1 K^1$, and the adjustable bearing-rods $H^2 H^2$, and which lifts the presser H and its frame H^1 . So soon as the bars or plates $K^2 K^2$ are, by

the revolution of the shaft F , freed from the action of the cams $K^3 K^3$, the rods $K K$ fall, and which permits the presser H to drop, its teeth $h h$ becoming embedded in the tobacco in the trough D , securing the same for the proper action of the knife. As the presser H falls so as to rest in the trough or box D , the frame H^1 is suspended by the tobacco, and so remains until the packer is again being elevated, when, by its own gravity, the plate-frame H^1 falls and frees the tobacco from the teeth $h h$, leaving it in the trough and in proper position for the next forward movement of the latter. At the forward section of the table B , and between suitable bearing-plates $L^1 L^1$, rests and travels the vertical knife or blade L . This knife or blade is worked by means of short bearing-plates $l l$ and vertical rods $L^2 L^2$, and which latter are secured at their lower section, by means of nuts $l' l'$, to a bearing-plate, L^3 , and to the under surface of which is secured a lever-arm, M . This lever-arm M is secured to an axial shaft, M^1 , and which is journaled in suitable bearings at the lower section of the frame A . At its rear section this lever-arm M may be forked, so as to have its bearings in the cam-shaped grooves cut in the opposite faces of the eccentric M^2 , and by means of which it is worked, and through which motion is imparted to the knife L . This eccentric is keyed on a shaft, m , and which is journaled in suitable bearings $m^1 m^1$ at the rear section of the frame A , as clearly shown in Fig. 1. At the outer section of the shaft m is a gear-wheel, m^2 , the teeth of which mesh with the teeth of the gear-wheel F' , and by means of which the necessary rotation is given to the shaft m , and, of course, to its eccentric M^2 . At the front of the machine, and journaled in suitable bearings between the frame A and table B , is secured the axial shaft N^1 , and to which is attached the tilting feed-plate N . At the outer section of this shaft is keyed a hook or bearing, n , and to which is secured a spring, N^2 , and which has its opposite bearing at or on the hook n^1 , secured at or near the center of the forward section of the machine, as clearly shown in Fig. 3. It will be observed that the tension of the spring N^2 is constantly exerted, and does hold or retain the tilting plate N in a true horizontal position until the knife descends, when, through the pressure of its projecting fingers $n^2 n^2$, so soon as a filling for the wrapper is cut off by the action of the knife, it tilts or drops, and thus feeds to the wrapper the filling required to form the cigar. So soon as the knife is elevated and the pressure of its fingers $n^2 n^2$ withdrawn from the plate through the tension of the spring N^2 , the plate is again returned to a horizontal position, or a position on the same plane, and on a line with the base of the trough D , and there held until the next filling is cut off, when it is again tilted by the fingers $n^2 n^2$, and the fresh wrapper supplied with its filling, as before. At the forward section of the frame, and on suitable right-angled

bearing-plates O' , is secured the stationary table O . Over and around this table O passes the belt P . One end of this belt is secured to a roller, P' , journaled in the bearings $O' O'$, and immediately under the table O . The other end of the belt is secured to a suitable rod, o , at the rear of the bearing-plates $O' O'$. To this roller P' is attached a ratchet, p , and which engages a pawl secured to one of the bearing-plates O' , and by means of which the belt P can be lengthened or shortened at pleasure, and thus made to accommodate itself to any size of cigar which it is desired to manufacture. The wrapper being placed on the table O and belt P , when the tilting plate drops the filling thereon, a roller, W , attached to a vibrating frame, W^1 , is moved forward, and the wrapper is folded around the filling by means of said roller and a curved depression which its forward movement causes the wrapper and filling to make in said belt. This vibrating frame W^1 is secured to an axial shaft, W^2 , which latter is journaled at the front and near the base of the frame A , and is operated or pushed out by means of an arm, R , secured to a traveling bearing, R^1 , and which is operated by cams $R^2 R^2$ on the shaft F . The carriage or bearing R^1 travels on parallel rods secured at the front of the bearing $k' k'$ and corresponding bearings at the rear section of the frame. This vibrating frame is so arranged and secured that one of the cams shall push it forward and the other return it. Therefore, so soon as its bearing R^1 is, through the revolution of the shaft F , relieved from the pressure of the cam R^2 , which has thrown it forward, it will be by the other cam, R^2 , returned, or be caused to fall back in position to fold or wrap the next cigar.

Thus it will be seen that the machine is au-

tomatic throughout, simply requiring manual labor to place the filling in the trough D and the wrappers on the tables O . I desire it distinctly understood that I contemplate using a series of boxes or troughs, the width of which shall correspond to all the different lengths of cigars which it is desirable to manufacture, and which, in connection with the means provided for adjusting the presser H and knife L , and of lengthening or shortening the belt P , permits the machine readily to be adjusted to the manufacture of each and every variety of cigar.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The vibrating bed C , trough or box D , pawl d , ratchet-rack a , and their operating mechanism, in combination with a suitable presser and knife, as and for the purpose specified.

2. The presser H , having teeth $h h$, and the frame H^1 , the latter being so combined and arranged in connection with the presser as to fall by its own gravity when the presser is elevated, the same being used in connection with a suitable knife, as and for the purpose specified.

3. In combination with a vibrating bed, C , and presser H , the knife L , tilting plate or chute N , spring N^2 , belt P , roller P' and its ratchet and pawl, frame W^1 , and roller W , the whole being arranged to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERIC HAEHNEL.

Witnesses:

EDWIN JAMES,
JOHN D. BLOOR.