

No. 635,920.

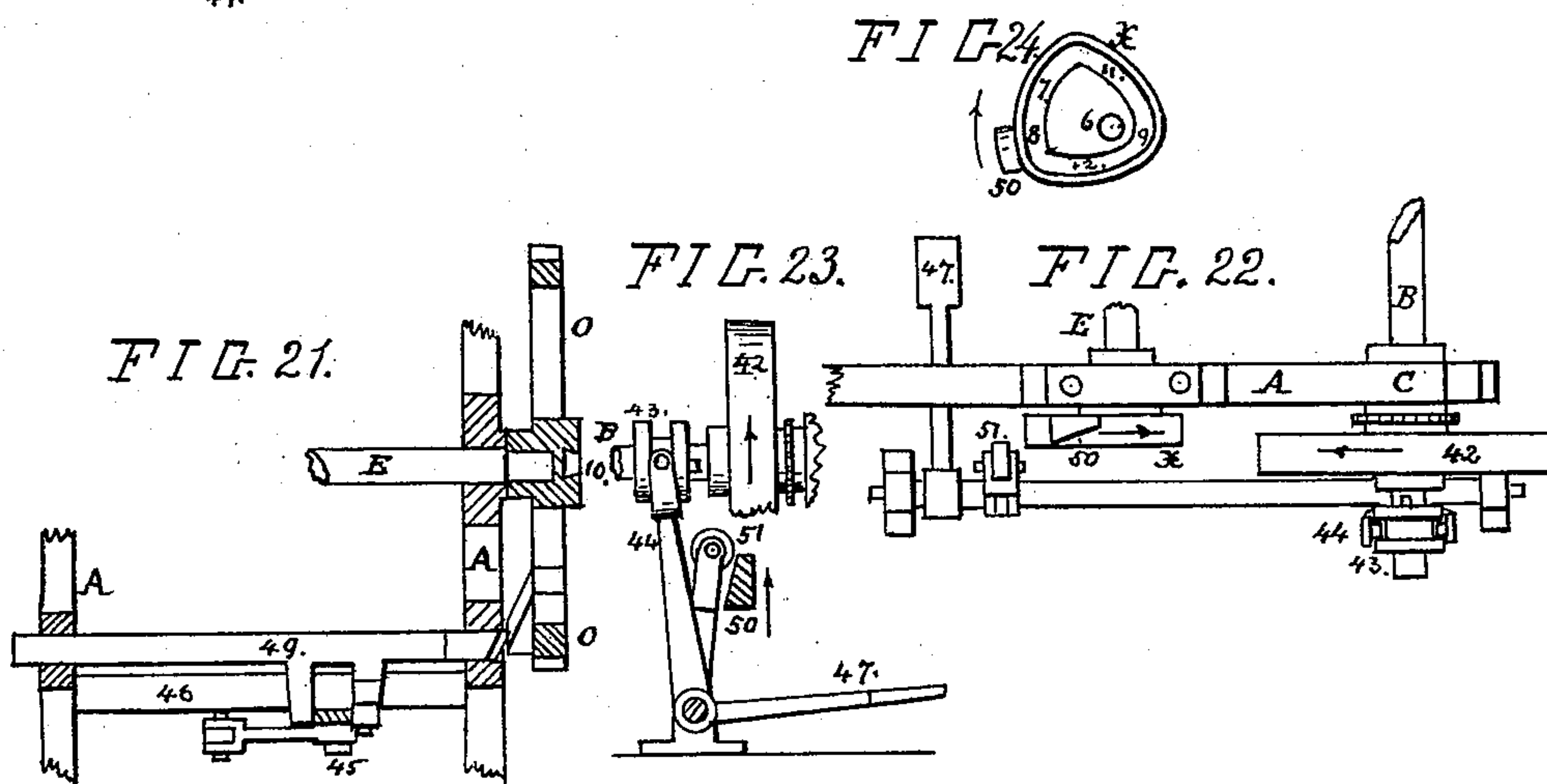
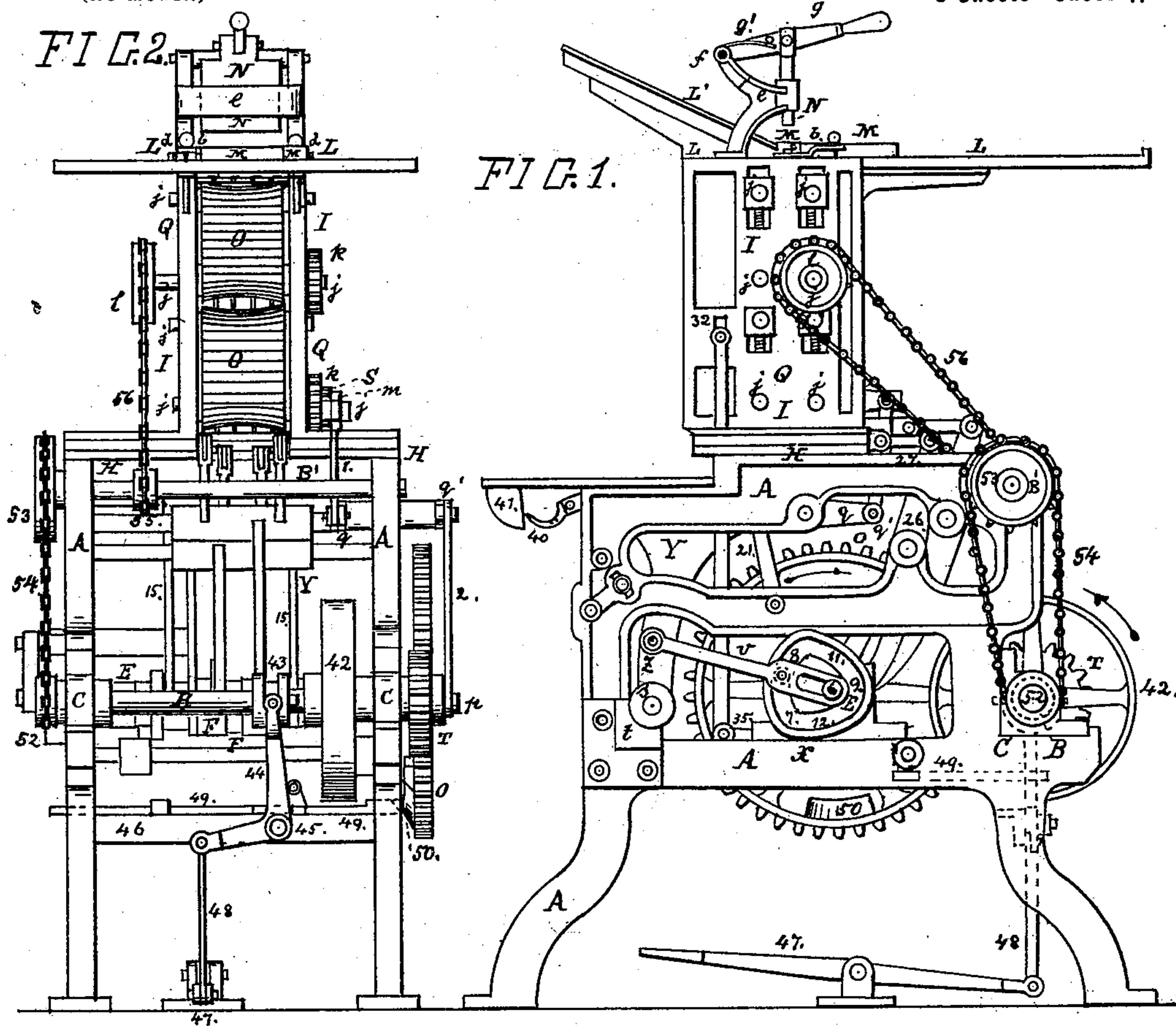
Patented Oct. 31, 1899.

J. DELA MAR.  
CIGAR BUNCH MACHINE.

(Application filed Nov. 30, 1898.)

(No Model.)

5 Sheets—Sheet 1.



Witnesses  
*[Signature]*  
*[Signature]*

Inventor  
*Joseph Dela Mar*

No. 635,920.

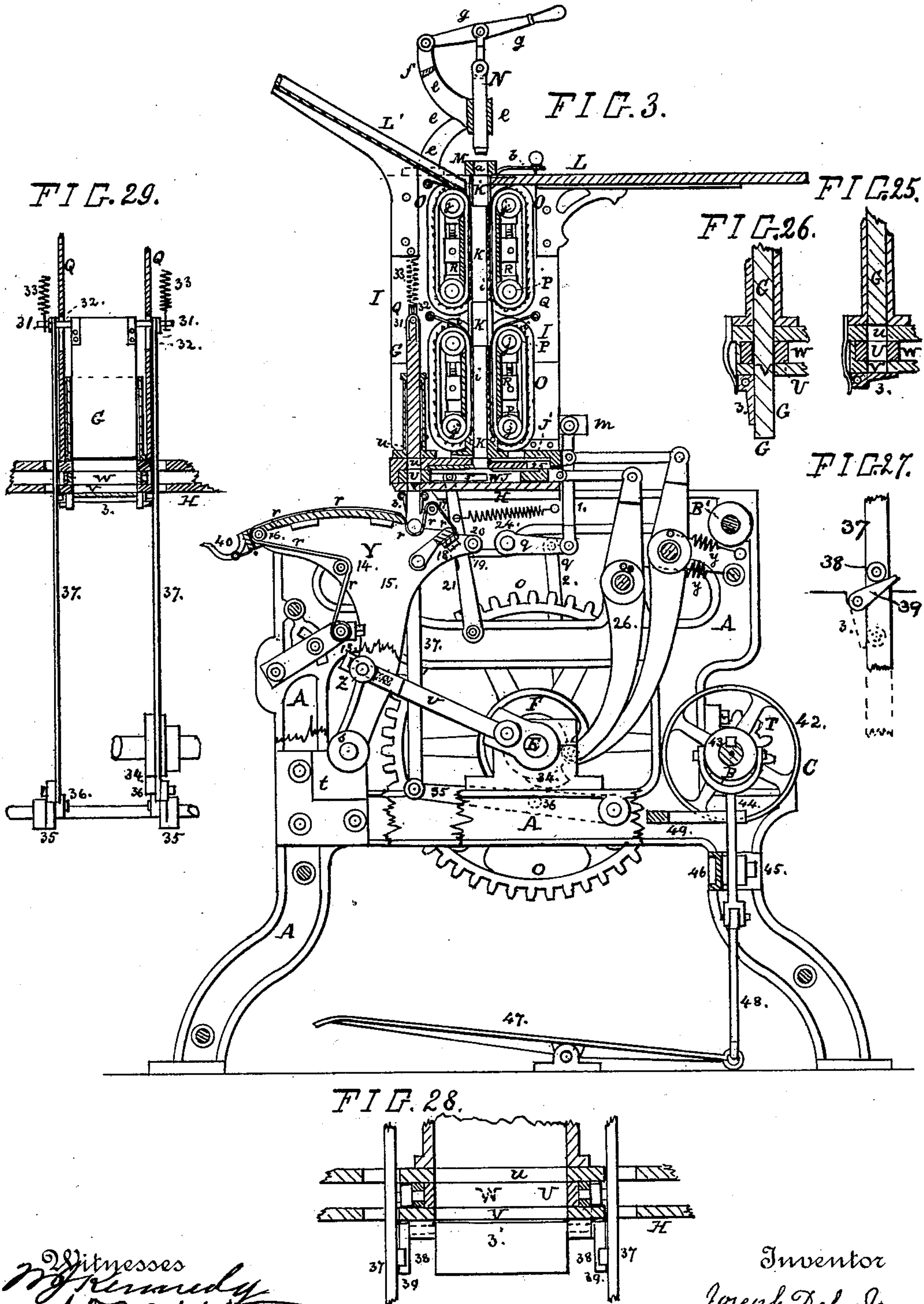
Patented Oct. 31, 1899.

J. DELA MAR.  
CIGAR BUNCH MACHINE.

(Application filed Nov. 30, 1898.)

(No Model.)

5 Sheets—Sheet 2.



Witnesses  
*W. Kennedy*  
*W. H. H. H.*

Inventor  
*Joseph Dela Mar*



**No. 635,920.**

**Patented Oct. 31, 1899.**

**J. DELA MAR.**  
**CIGAR BUNCH MACHINE.**

(Application filed Nov. 30, 1898.)

(No Model.)

**5 Sheets—Sheet 3.**

FIG. 4.

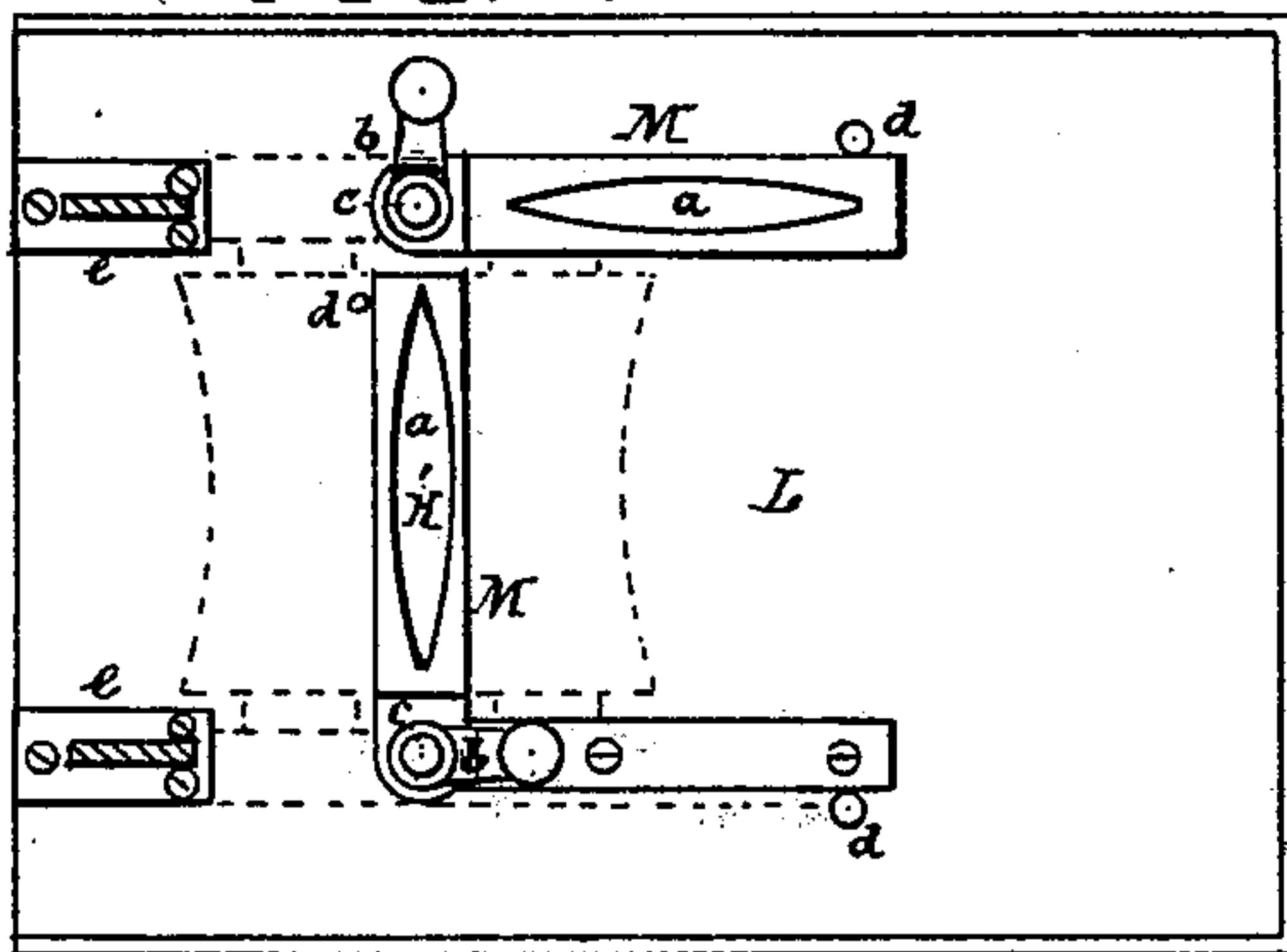


FIG. 15.

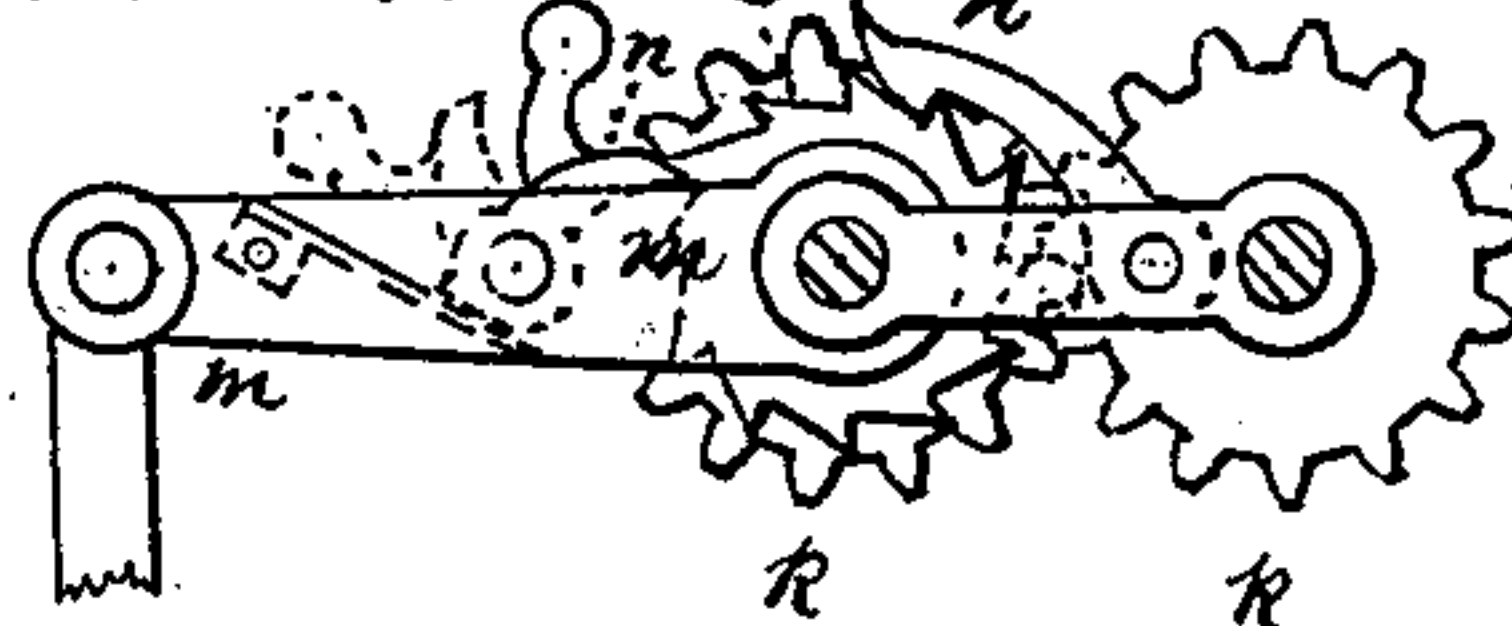


FIG. 14.

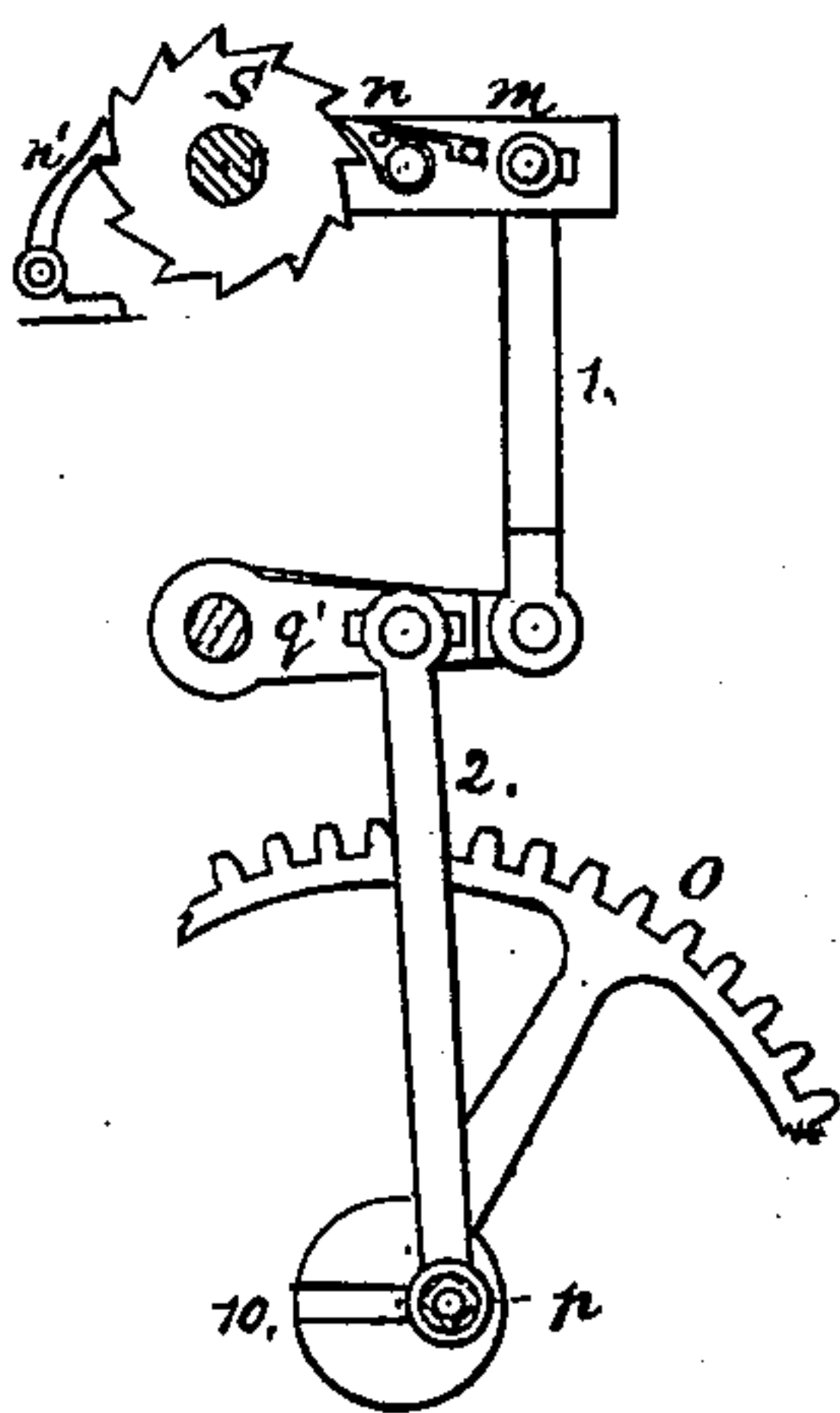
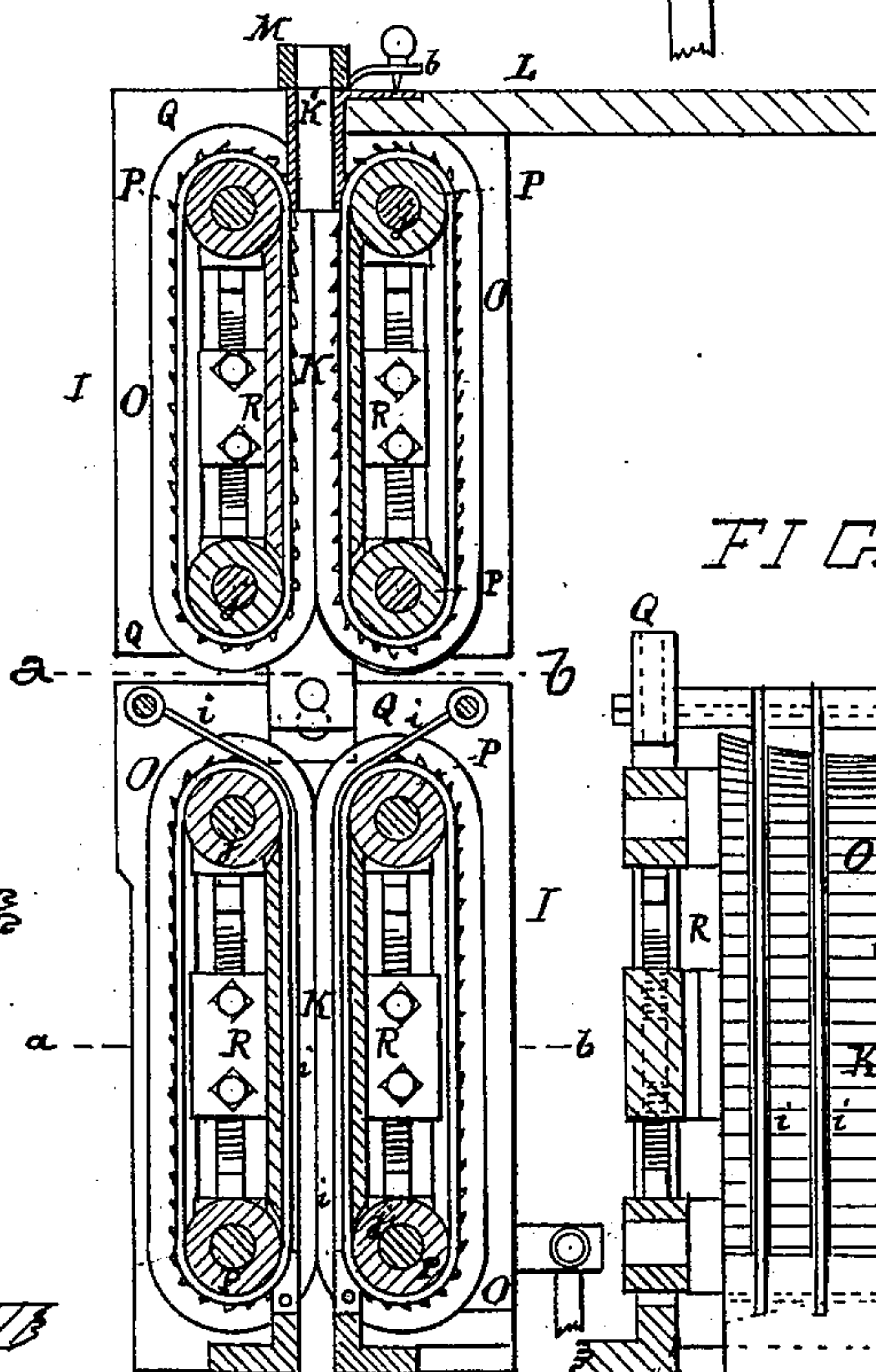
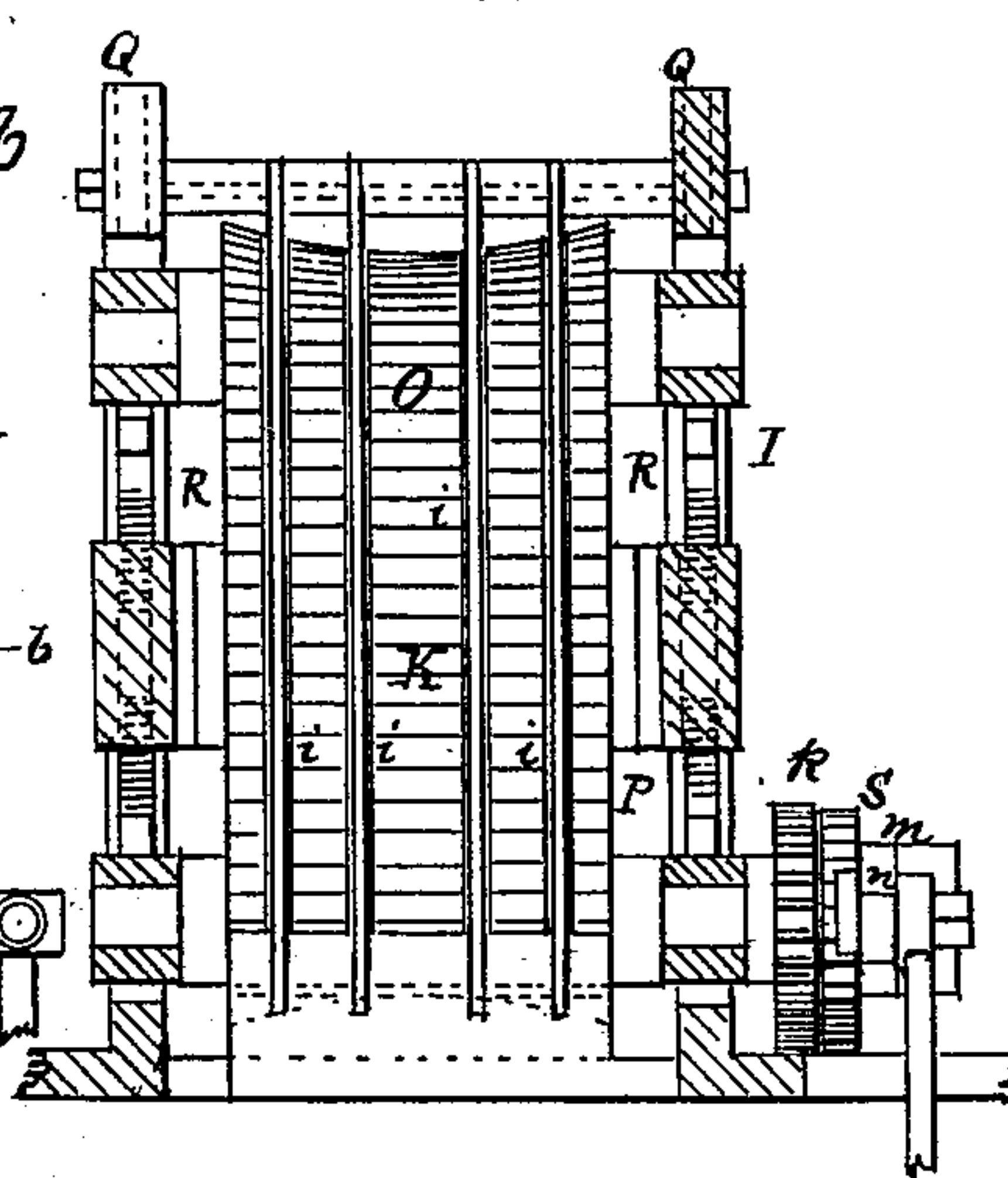


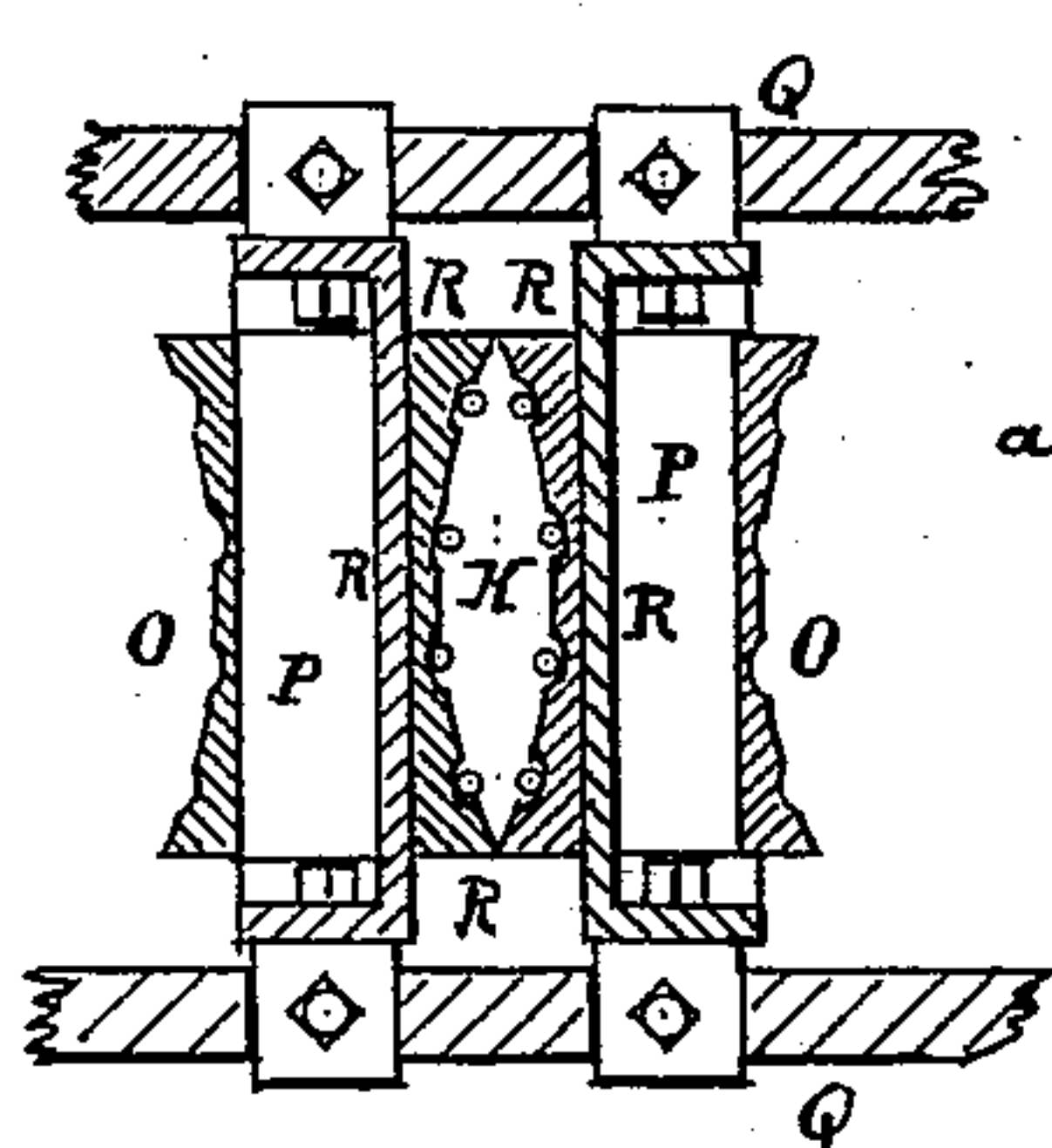
FIG. 7.



*FIG. 9.*



*FIG. 10.*



Witnesses  
~~William~~  
 W. J. Kennedy

Inventor  
Joseph Dela Mar

No. 635,920.

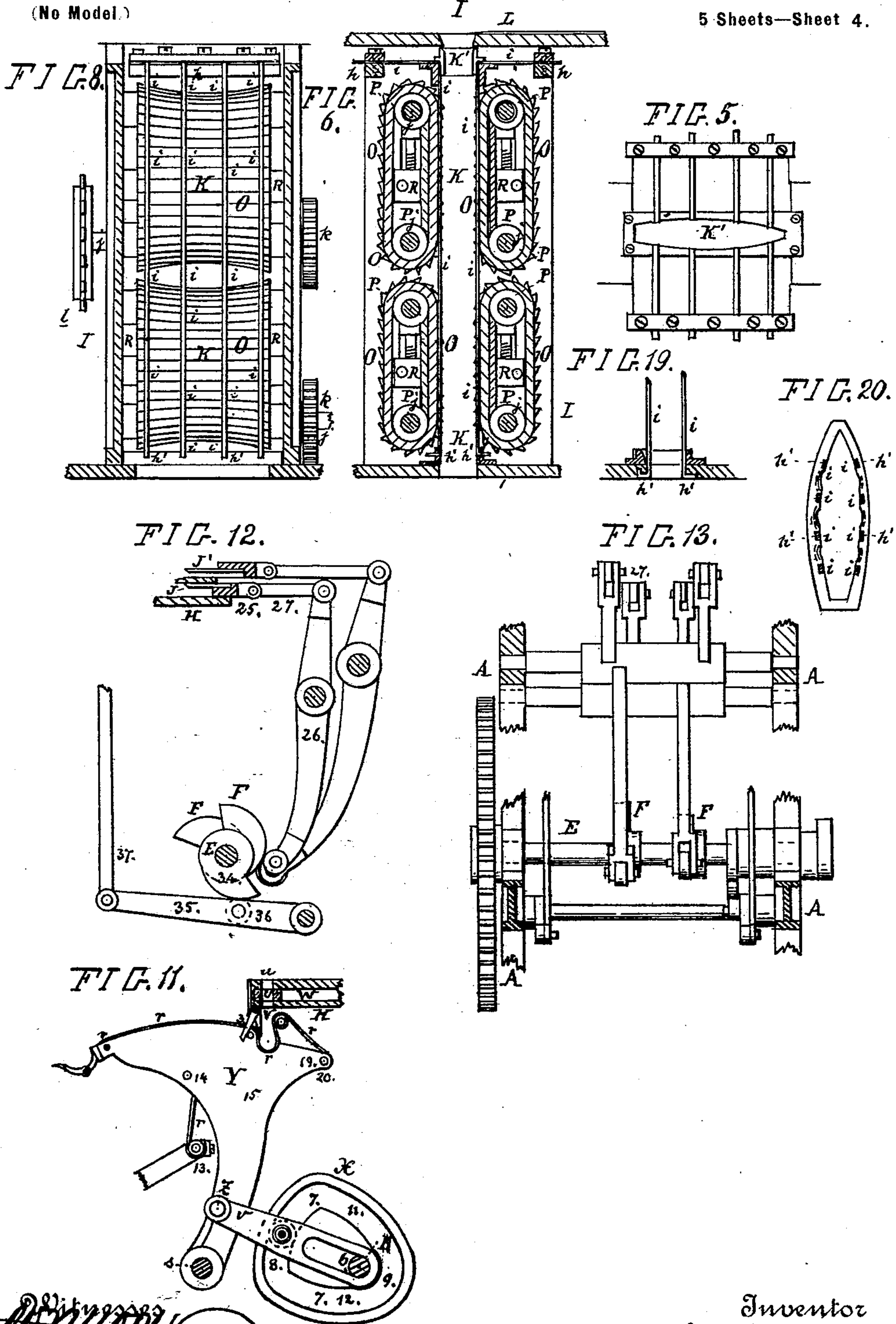
Patented Oct. 31, 1899.

J. DELA MAR.  
CIGAR BUNCH MACHINE.

(Application filed Nov. 30, 1898.)

(No Model.)

5 Sheets—Sheet 4.



*W. H. Kennedy*

Inventor  
*Joseph Dela Mar*

No. 635,920.

Patented Oct. 31, 1899.

J. DELA MAR.  
CIGAR BUNCH MACHINE.

(Application filed Nov. 30, 1898.)

(No Model.)

5 Sheets—Sheet 5.

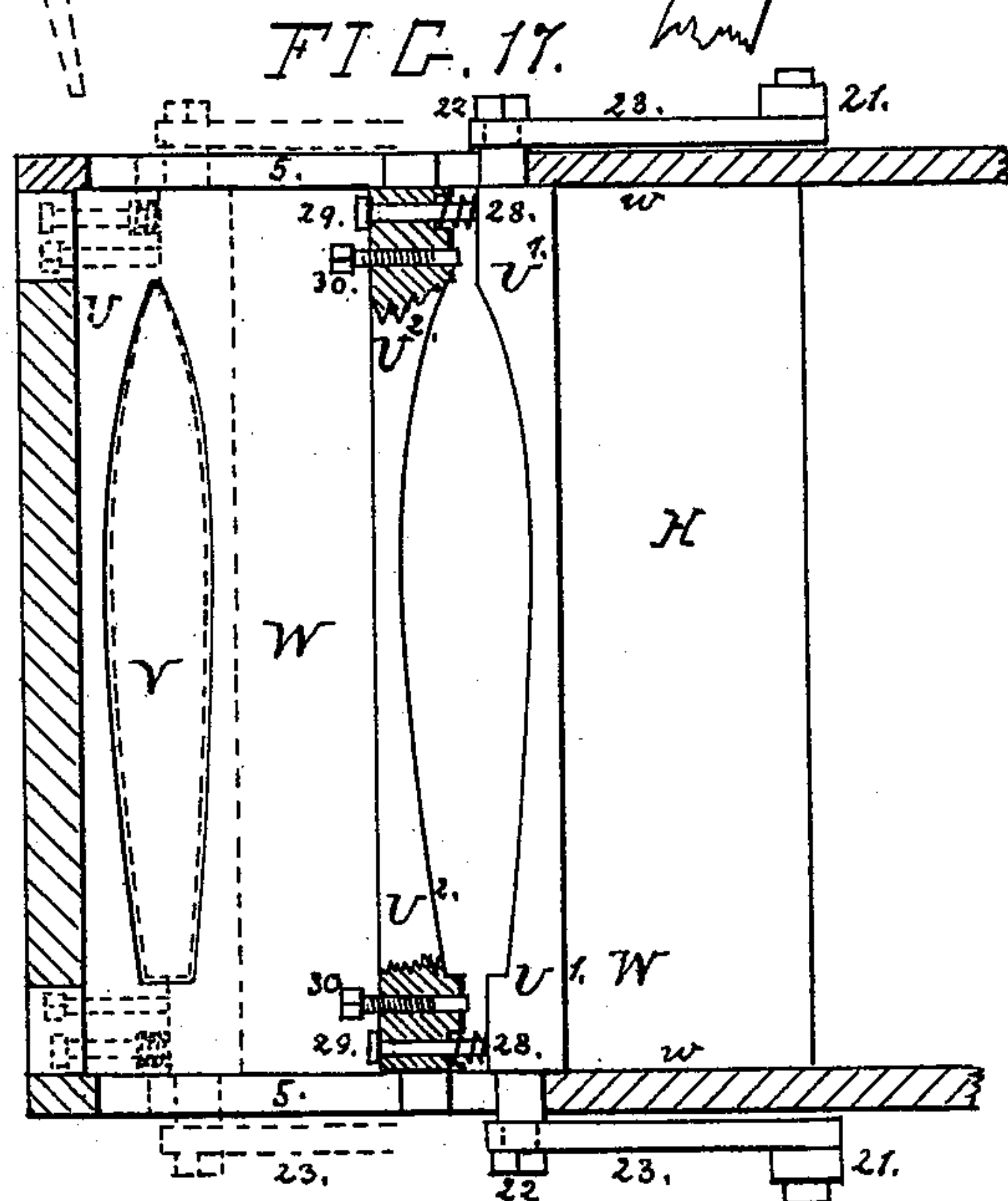
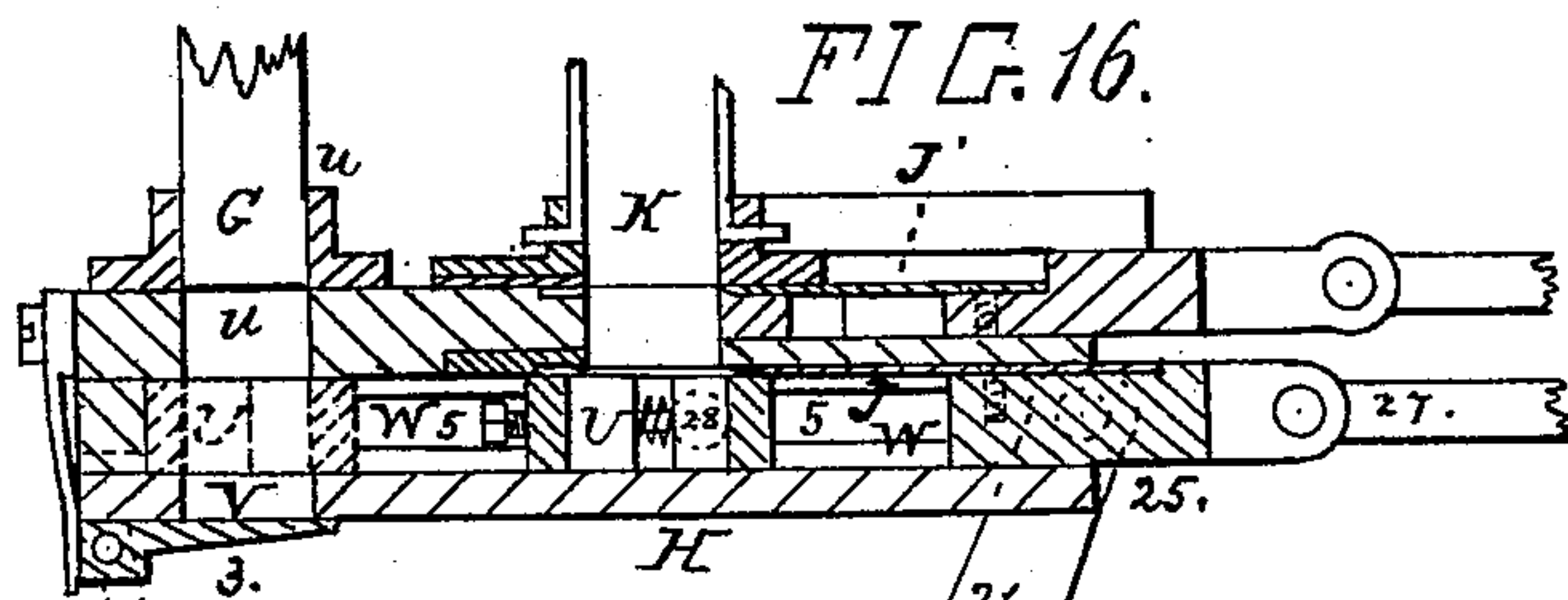
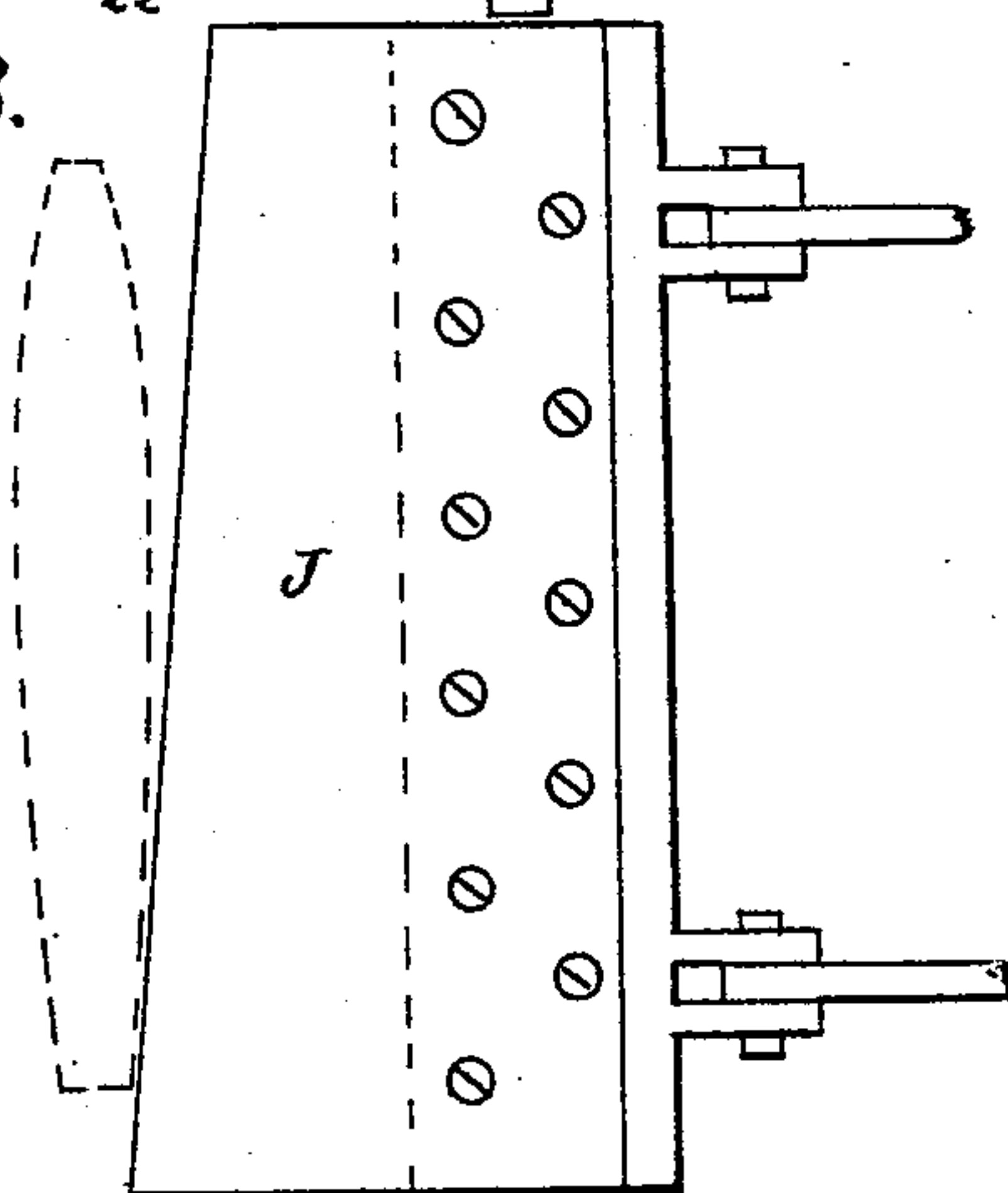


FIG. 18.



Witnesses  
*W. H. H. H.*  
*M. J. Kennedy*

Inventor  
*Joseph Dela Mar*



# UNITED STATES PATENT OFFICE.

JOSEPH DELA MAR, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO  
ISRAEL LEWIS, OF SAME PLACE.

## CIGAR-BUNCH MACHINE.

SPECIFICATION forming part of Letters Patent No. 635,920, dated October 31, 1899.

Application filed November 30, 1898. Serial No. 697,927. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH DELA MAR, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cigar-Bunch Machines, of which the following is a specification.

My invention relates to an improvement in the cigar-bunch machines; and it consists in combination and arrangement of parts, which will be more fully described hereinafter.

In the annexed drawings, Figure 1 represents a side elevation of the machine. Fig. 2 is an end view of the same; Fig. 3, a vertical longitudinal section of the same, showing a modification of the rolling-table and the cam movement accomplished by a crank movement. Fig. 4 is a sectional top view of the feeding-table with the alternate operative filler-molds. Fig. 5 is a detached top view of the feedway, inlet-plate, and guide-wire fastenings. Fig. 6 is a detached vertical central longitudinal section of the feedway formed by the endless bands and the guide-wires. Fig. 7 is a similar view of a modification of the same. Fig. 8 is a central vertical cross-section of the feedway shown in Fig. 6. Fig. 9 is a similar view of a modification of the same at the line *a b* of Fig. 7. Fig. 10 is a detached horizontal section of the endless bands shown in Fig. 7. Fig. 11 is a detached side view of the rolling-table shown operated by my preferred cam motion. Fig. 12 is a detached side view of the levers and cams operating the filler-cutters and the plunger of the machine. Fig. 13 is a rear view of the same. Fig. 14 is a detached side view of the feed-motion parts. Fig. 15 is a modification of the pawl arrangement of the same on a larger scale. Fig. 16 is a detached longitudinal section, on a larger scale, of the raceway and of the expanding filler carrying filler-mold shown in full lines in expanded state as receiving a filler under the feedway and shown in dotted lines contracted when placed under the plunger to deliver the filler, and said figure shows also the cutters for cutting the filler of continuous filler. Fig. 17 is a detached horizontal section of the same raceway on the same scale and showing the filler-carrying mold from the top in an

expanded condition in full lines and showing said mold contracted in dotted lines over the opening in full lines for delivering the filler by the plunger into rolling band pocket or loop. Fig. 18 is a detached top view on the same scale of the lower cutter, which cuts the filler from the continuous filler and showing the bottom outlet of the feedway in dotted lines. Fig. 19 is a detached vertical section of the bottom end of the feedway as shown in Fig. 6, with a modification of the fastening of the guide-wires. Fig. 20 is a detached top view of the guide-wires bisected above their fastening. Fig. 21 is a detached top view of the shifter-bar of the automatic stop-motion of the machine and showing the parts of the frame in which the shifter is guided in section, and also showing the cam on the gear-wheel for engaging the shifter-bar. Fig. 22 is a top view of a modification of the automatic stop-motion when the driving-pulley is required to be located outside of the frame of the machine. Fig. 23 is an end view of the same. Fig. 24 is a detached face view of the cam for operating the same. Fig. 25 is a detached vertical section of the end of the raceway and the filler-carrying mold in position under the plunger and over the discharge-opening of the raceway before the false bottom or flip under said opening has opened. Fig. 26 is a similar view of the same after the plunger has passed through the mold and opened the flip and discharged the filler. Fig. 27 is a detached view of the side of one of the plunger-connecting rods, showing its stud engaging the outer arm of the flip to open the same. Fig. 28 is a vertical cross-section through the end of the raceway and the mold and showing the plunger-connecting rods engaged and closed by the action of the table and the flip-arms with their studs to open the same, and the plunger is shown removed to exhibit the parts back of it. Fig. 29 is a detached vertical section of the plunger-guides and the plunger, its connecting rods and levers being shown unbisected.

The machine is constructed with two longitudinal vertical parallel side frames *A A*, which are connected with suitable strong brace-rods passing through them and have shoulders against the inside of the frame and



have threaded screw ends with suitable screw-nuts against the outsides of the frames. Across the rear ends of the frames is arranged a horizontal driving-shaft B, guided in suitable bearings C C, provided on the frames. Said shaft is furnished with a driving-pulley 42, and a secondary horizontal shaft E is arranged nearly central between the ends of the machine and nearly on the same level of the driving-shaft. Said second shaft carries between the frames the cams F for operating the filler-cutters J and J' and the plunger G. Across the top of the frames nearly central between their ends is secured a horizontal plate H, upon which is mounted the tobacco-feeding apparatus I, which has a vertical feedway K of any desired shape, as shown in Figs. 3, 6, 7, 8, 9, and 10, the shape being varied according to the shape of the cigar or cheroot being made. On a level with the top inlet-plate K' of the feedway is arranged the horizontal tobacco-feed table L, extending rearward from said plate, and on the opposite sides of said table are placed two opposite feed-operators, for each of which is provided a horizontal swinging filler-mold M, pivoted on one end at the central cross-line of the inlet-plate K' to each end of its opening, as shown in Fig. 4, each mold having a filler-opening *a* through it to contain sufficient leaves for one bunch between the top surface of the table and the top level of the mold, and said opening has reduced ends or a cigar-shaped outline, as shown, to distribute the leaves with reduced ends. The bottom sides of said molds slide close upon the top surface of the table, and each may be turned to a spring-stop *b* to lie parallel before the operator and be turned on its pivot *c* to a position accurately over the opening of the inlet-plate K', and over the mold M is arranged a hand-lever plunger N to slide vertically down through the inlet-plate K'. Said plunger is guided and held in a standard *e*, with legs attached to the top of the table L, and said standard *e* has an upward forked arm *f*, in which is fulcrumed a central hand-lever *g*, which is connected by means of a link pivoted to the top of the plunger N. The lever *g* is engaged by means of a spring *g'*, which raises the lever up. By these means the operator can press and insert the filler from his mold properly into the feedway K. While one operator adjusts and places the filler in his mold before him the other operator has his mold over the feedway and by the plunger inserts the filler into the inlet-plate K' and the feedway K. With this alternate system of molds the feedway is supplied regularly and quickly.

The feedway is formed between two opposite endless bands O O, preferably made of rubber and held upon rollers P P, guided in suitable bearings held in vertical frames or plates Q Q. Said feedway may be inclined or horizontal, but is preferred vertical, and the endless bands may be of any suitable material, but rubber is preferable.

For making the filler for the cigars having reduced ends the feedway is preferred of a shape in a horizontal section with reduced ends, as required by the cigar to have less tobacco at the ends.

The engaged sides of the bands with the tobacco filler are made rough or toothed or corrugated across the face to cause the gripping and forwarding of the engaged filler leaves, as shown, and the feedway has several equal-distributed smooth longitudinal guide-wires *i* over the engaged sides of the bands to keep the filler from attaching to the bands and properly guiding the same, as shown in Fig. 6. Said wires may be round, as shown in Fig. 10, but are preferred to be of flat shape, as shown in Figs. 6, 8, and 20. The upper ends of each row of wires are clamped solidly to a cross-bar *h*, arranged above the band on which they are employed, and each wire passes close by the respective band and finally down to the bottom portion of the feedway. Said bottom portion may have secured to it ankle-plates into which the ends of the wires are secured by a hook *h'*, formed on each wire, as shown in Fig. 6. Said wires may be embedded or let into the sides of the bottom opening or into a plate at the bottom of the feedway, as shown in Figs. 19 and 20. The pulleys or rollers P are each mounted upon a proper shaft *j*, of which each end is furnished with a proper bearing in the side frames or plates Q Q, between which both bands are arranged. The bearings of the top rollers or pulleys of the bands are fitted in slots in the plates Q and furnished with set-screws to raise the bearings, and thereby stretch the endless bands and to cause the rollers to engage the bands with sufficient frictional contact to prevent the bands from slipping. The power is applied to the lower roller of one of the bands, and the lower rollers of both bands have their shafts to project beyond the outer sides of the plates Q. Upon the projecting shafts are employed gear-wheels *k*, engaging one another to transmit the power to both bands, as shown in Fig. 15. The portion of each endless band between its pulleys or rollers is supported against the pressure within the feedway by means of a vertical smooth plate R back of the band, which extends from side frames or plate Q to plate Q and has a right angular flange on each end and is jointed between said plates and bolted to them, by which means said plates are secured together solidly.

According to the kind of filler of small or larger leaves the feedway may be formed between one pair of endless bands; but I prefer to form the feedway with two pairs of endless bands arranged in line with each other, one above the other, and the guide-wires passing through the whole feedway from the inlet-plate to the final end of the feedway close to the cutter of the filler and provide the upper pair of endless bands with a regular continuous motion obtained from the driving-shaft E, which is driven from the driving-



shaft B by means of a small pinion-gear T, secured upon the end of the shaft B and engaging a large gear-wheel *o*, secured upon the rear end of the shaft E. On the rear of the wheel *o* is held in a dovetail slot 10 an adjustable crank-stud *p*, and below the feed-lever *m* is pivoted to the frame A a lever, with one arm *q* on the inside of said frame A and a secondary arm *q'* on the outside of said frame. The arm *q* is connected by a link with the feed-lever *m* and the arm *q'* is connected by a rod 2 with the stud *p*. Thus the motion of the stud *p* is transmitted to the feed-lever *m*.

Below the vertical feedway K is arranged the horizontal raceway W of the filler-mold U and the filler-cutter J. At the forward end of the raceway is arranged the vertical plunger G in a vertical guide-opening *u* above the raceway, and the raceway-discharge opening V is provided in line with the plunger through the bottom of the raceway. On the under side of the raceway-bottom is provided an automatic closing-flip or false bottom 3, hinged to the raceway-bottom. This flip is also used to stretch the wrapper or smooth it out while the wrapper is passing under it by pressing down upon its top at its lower edge.

In line centrally below the plunger G an opening V is arranged between the frames A A, the bunch-rolling table Y, its rolling-apron *r*, and its trunnions *s s*, turning in bearings *t*, attached to the frames A A, all as shown in Figs. 1, 2, 3, and 11.

The raceway W is formed horizontally below the feedway and has parallel sides in which the filler-mold is fitted to travel readily, and the vertical sides of the raceway have horizontal slots 5, in which the ends of the filler-mold are guided, as shown in Figs. 3, 16, and 17.

The travel of the mold extends from under the feedway to exactly under the plunger at the end of the raceway to receive the filler from the feedway and carry the same to the plunger, which discharges the filler through the opening V into the pocket formed by the rolling-band *r*. The bunch-rolling table Y may be vibrated by a crank, as shown in Fig. 3; but a cam, as shown in Figs. 1, 11, and 24, is preferred.

The side of the table Y has a projecting horizontal stud Z a suitable distance from its trunnions *s*, and the shaft E on the same side of the frame has upon it an eccentrically-grooved cam X. To the stud Z is pivoted a slotted link *v*, which is guided to slide with its loose slotted end upon a central stud 6, projecting from the face of the cam, and is held by an overlapping head of said stud to the face of the cam. Said link *v* is furnished with a stud having a friction-roller to pass properly in the groove 7 of said cam without lost motion and is obliged to follow said groove, which is constructed with one large concentric segmental portion 8 to move the table Y to its extreme forward position and

forming the loop or pocket under the plunger G, in which to receive the filler from the plunger, and an opposite small concentric segmental portion 9 to move the table from the plunger rearward for rolling the bunch, and with an eccentric portion 11 from this large curved to the small curved, and one, 12, from the small to the large radius.

The rolling-apron *r* is secured with its forward end to an adjustable cross-bar 13 between the frames A A, and the apron is clamped to the bar 13. It passes over a roller 14, secured between the legs 15 of the table, and said apron passes from said roller over a roller 16 on the forward end of the table and from over the periphery of the table to a roller 17, journaled in the sides of the frame close under the plate H and near the rear side of the opening V, and from the roller 17 it passes to a pivoted adjustable clamp 18 near the rearward end of the table and in it, all shown clearly in Fig. 3. The vertical legs 15 of the table have each a rearward extension 19, in each of which a horizontal stud 20 is secured projecting toward the opposite frame A, and to each frame is pivoted a vertical lever 21 to engage with the relative stud 20.

The filler carrier or mold U passes between two vertical sides *w* of the raceway and the ends of the mold project and pass through horizontal slots 5, made through the said sides, and the extreme ends of the projecting ends are formed with studs 22, projecting beyond the sides of the raceway, and the plate H has vertical longitudinal slots through which the vertical levers 21 pass and which are each connected with the relative stud 22 of the mold U by means of a link 23, as shown in Figs. 3, 16, and 17. Said levers 21 have each a spring 24 to draw it rearward against its respective stud 20 and bring the mold U home. When the table passes beyond the motion required by the mold and lever 21, the motion of the lever and mold is stopped by the end of the slots 5 and the table and studs 20 pass on away from them to finish their vibrations.

The cutter J is attached to the slide 25. It is operated by means of the cam F upon the shaft E. (Clearly shown in Fig. 12.) The cam F engages a balance-lever 26, which is pivoted by trunnions turning in bearings formed in the opposite frames A A. Said lever 26 has a pair of short arms connected with the slide 25 by means of the links 27, and it has a long arm engaging the cam F. By means of a spring *y* the lever is held to the cam F.

The secondary cutter J' is not used for cutting off a charge. It is only used when operating upon tobacco liable to pack too close or liable to leave no draft between the leaves. When said cutter is used, a secondary lever and cam are preferably used.

The filler carrier or mold U is constructed in two main sections U' and U<sup>2</sup>, which are held apart by springs 28 between them. The object of this sectional mold is to allow the mold to open or expand and other times to



allow it to be contracted for the purpose that the mold while expanded may receive the filler with facility and while carried and delivered to be held more firmly and be placed with positiveness.

When the mold is placed under the feedway, it is allowed to expand automatically to receive the filler with facility, but as soon as started to move the mold contracts and grips and holds positively the filler until the plunger has control of it. The flip 3 remains closed, as shown in Fig. 16, and the filler is held between the end of the plunger and the flip until the filler is forced into the pocket of the roller or band. By this means the machine may be operated more rapidly. The section U' of the mold has guide-studs 29, on which the section U<sup>2</sup> slides, and by the springs over the studs 29 the sections are expanded.

The plunger G is held with its lower end in the guide-opening *u*, and its top portion has a cross-rod 31 through it. Said rod projects through both vertical plates Q of the feeding apparatus, which both plates have suitable vertical slots 32, in which the ends of the rod 31 are guided. To said rod ends are attached the lower ends of the spiral springs 33, which have their top ends secured to the plates Q. By means of the springs 33 the plunger is raised. To force it down, the shaft E is furnished with two cams 34, and on the inner side of the opposite frames A A are employed on each a pivoted lever 35, each furnished with a stud and friction-roller 36 to engage with the aforesaid cams 34. The loose ends of the levers 35 are each connected with one corresponding end of the cross-rod 31 by means of a rod 37. The cross-plate H and the plate above it are slotted for the passage of the rods 37. Said rods 37 have roller-studs 38, and the flip 3 has an arm 39 beyond its bearing to engage the stud 38, as shown in Fig. 27, by which means the flip is opened or closed, or it may be only opened thereby and closed and held closed by a spring.

40 represents the fingers attached to the forward end of the rolling-table to receive the finished bunches, from which each is placed in the bunch-box 41, provided on the forward end of the table.

Upon the driving-shaft B is furnished the driving-pulley 42, which revolves loose upon the shaft B. The machine is provided with an automatic stop-motion to stop after every complete oscillation of the rolling-table or revolution of the shaft E. For this purpose is provided upon the driving-shaft B the clutch 43, which is fitted to slide upon the shaft over a fixed key. Said clutch has the usual groove, in which the clutch-fork 44 engages to slide the clutch, which has the usual projecting studs to engage into the cavities made for them into the face of the pulley-hub. The clutch-fork 44 is pivoted at 45 to a cross-bar 46, which is bolted between the frames A A, and said fork has one vertical arm, on which the fork is formed, and one horizontal arm,

to which the treadle 47 is connected by the rod 48.

49 represents a sliding shifter-bar which has its ends fitted and guided in suitable slots in the frames A. On the shifter-bar are made two rearward arms, between which the vertical arm of the clutch-fork is guided. On the wheel *o*, near the rim, is formed a cam 50, which engages the end of the shifter-bar, and thereby disengages the clutch and stops the motion of the machine. When the machine requires the driving-pulley to be placed outside of the frame of the machine, said automatic stop-motion may be modified. The clutch-fork 44 and treadle may both be secured on one arbor and the cam may engage a third arm 51, secured upon the same arbor to engage a cam 50, formed on the cam *x* of the rolling-table, as shown in Figs. 22, 23, and 24.

As shown in Figs. 1 and 2, above the driving-shaft B is arranged a parallel counter-shaft B' in suitable bearings in the opposite frames A A, and the shaft B is furnished with a small chain-wheel 52, and on the shaft B' is a larger chain or sprocket wheel 53, and the wheel 52 is connected by an endless chain 54 upon the counter-shaft B', which is also provided with a small chain-wheel 55, connected by an endless chain 56 with the sprocket-wheel 1. By these means the wheel 1 derives its motion from the driving-shaft B.

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

1. In a cigar-bunch machine, suitable guiding-rollers, endless bands passing around the rollers and arranged in such relation to each other as to form a continuous feedway between the bands, combined with longitudinal guiding-wires arranged vertically between the moving bands and in the feedway, substantially as described.

2. In a cigar-machine, guiding-rollers arranged in pairs, and endless bands passing around said rollers and made thicker at their outer edges, and which bands are arranged in such relation to each other as to form continuous feedways, combined with longitudinal guiding wires or rods arranged vertically between the endless moving bands, substantially as described.

3. In a cigar-bunch machine, guiding-rollers, moving endless bands passing around said rollers, and plates placed between the rollers and against the bands, combined with the vertically-arranged guiding-wires which are placed inside of the bands, and in the passage formed between them, substantially as set forth.

4. In a cigar-machine, guiding-rollers, endless bands passing around said rollers and arranged in such relation to each other as to form a feedway, and guide-wires placed vertically in the feedway between said endless bands, combined with a horizontal reciprocating filler-mold placed within a horizontal raceway, and a horizontal reciprocating cutter, substantially as specified.



5. In a cigar-machine, suitable guiding-rollers, endless bands placed around said rollers and forming a feedway between them, a reciprocating mold, a cutter placed in a horizontal raceway, and a vertical plunger, combined with an inlet-plate leading into said raceway and having an outlet opposite a stop for said mold, an automatic opening-and-closing false-bottom flip, and an oscillating rolling-table passing under the said flip and forming a loop or pocket with its rolling-apron to receive the filler from the feedway, substantially as specified.

6. In a cigar-machine, a horizontal sectional carrying-mold, means for expanding and contracting the mold, and a raceway in which the mold is reciprocated, combined with a rolling-table, and a plunger for discharging the filler upon the table, substantially as set forth.

7. In a cigar-machine, a vertical feedway, and a horizontal raceway with a discharge-opening in its bottom, and a plunger for forcing the filler from the mold, combined with the mold reciprocating in the raceway so that the filler can be forced from the mold by the plunger, substantially as described.

8. In a cigar-machine, a vertical plunger which passes through the mold to the apron of the machine, a way in which the plunger moves, a horizontal raceway having a discharge through its bottom, a reciprocating mold placed in the raceway, and means for reciprocating it, combined with an oscillating rolling-table below the horizontal raceway, a rolling-apron fixed on pulleys 17, and clamp 18 on the rolling-table, substantially as and for the purposes shown.

9. In a cigar-machine, the horizontal raceway, the cutter J, the cutter-head 25, the link 27, and the lever 26, combined with the cutter J', the link and the lever for operating it, and the cam F, substantially as shown and described.

10. In a cigar-machine, the drums or rollers, and mechanism for operating them, and

endless bands of rubber stretched over said drums or rollers forming a way, combined with stationary plates arranged inside of the endless bands so as to receive the pressure of the tobacco passing through them, longitudinal strips or guiding-wires placed in the feedway, said bands being roughened on their outer sides so as to engage with the material being fed forward, substantially as shown.

11. In a cigar-machine, two endless vertically-moving rubber bands partially grooved upon their inner sides where they come in contact with the material being fed forward, vertical guiding-rods placed inside of the said bands, and which bands are grooved upon their surfaces opposite the wires, substantially as described.

12. In a cigar-machine, a pair of vertical endless moving bands, suitable rollers around which they are placed, and means for moving them continuously, combined with a second pair of endless moving bands rollers around which bands are placed, and means for moving said bands periodically, and which means is adapted to be disconnected from said rollers, the second pair of rollers and bands being placed below the continuously-moving bands and rollers but in line therewith and separated by a suitable space in between the bands to form a passage-way for the tobacco, substantially as specified.

13. In a cigar-machine, a horizontal feed-table, and a lateral vertical feedway-inlet, combined with two alternate one-quarter-turn swinging filler-molds with spring-stops, and a central lateral hand-lever plunger over said inlet-way, as and for the purpose herein set forth.

Signed at New York, in the county of New York and State of New York, this 29th day of November, A. D. 1898.

JOSEPH DELA MAR.

Witnesses:

W. P. MOON,  
WM. J. KENNEDY.