

No. 786,247.

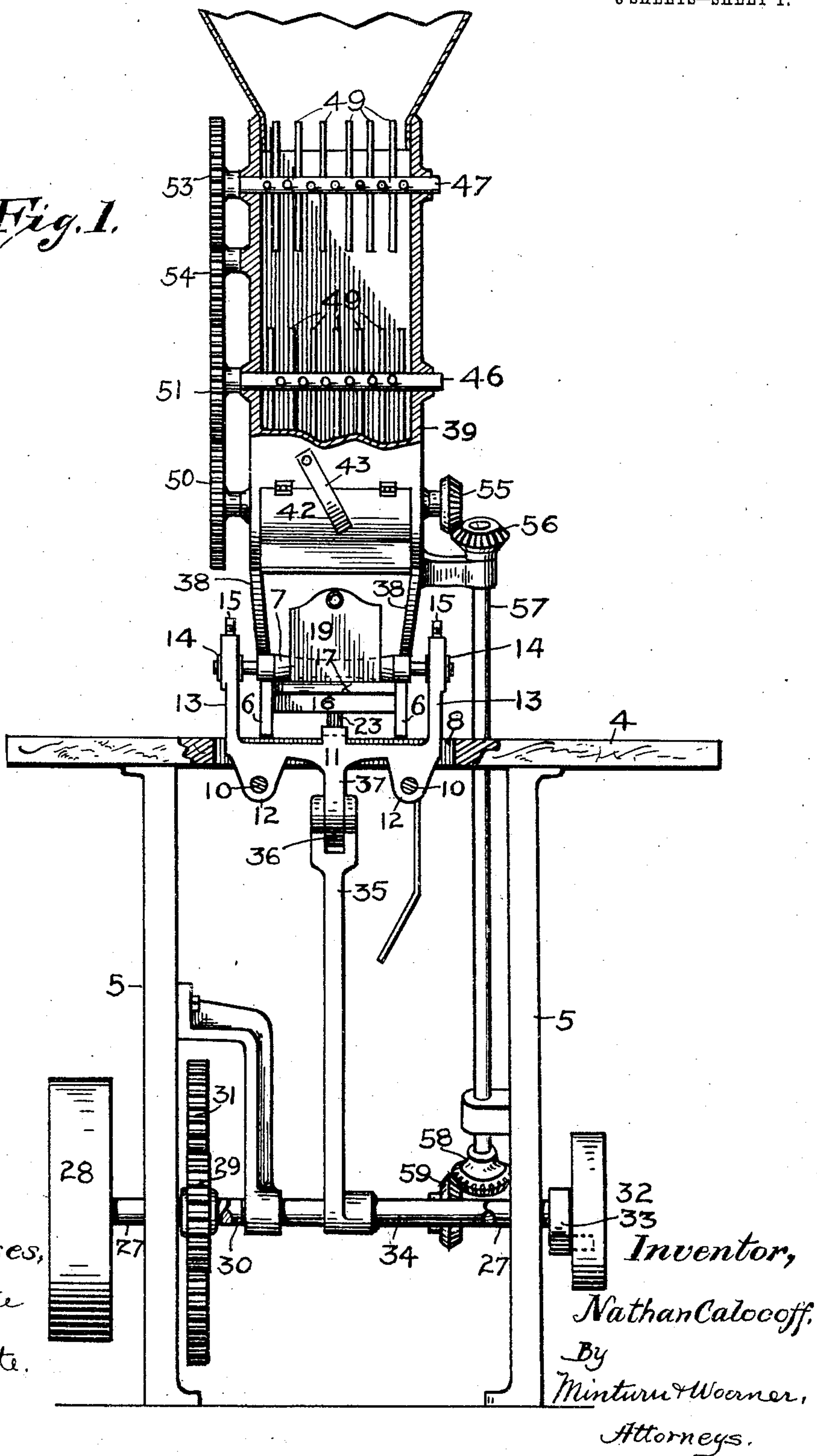
PATENTED MAR. 28, 1905.

N. CALOCCOFF.  
CIGAR BUNCHING MACHINE.

APPLICATION FILED OCT. 15, 1904.

3 SHEETS—SHEET 1.

*Fig. 1.*



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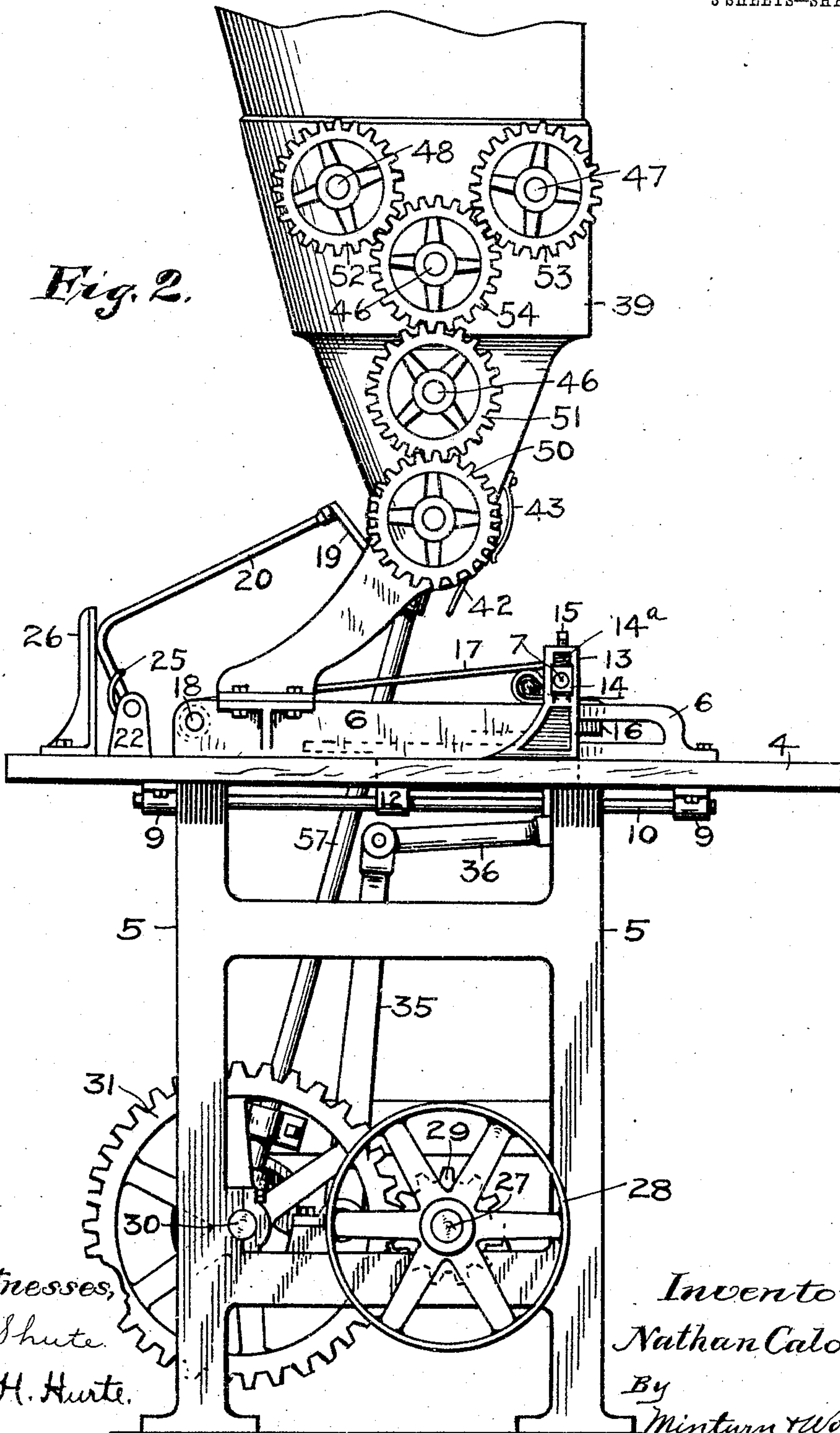
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3 SHEETS—SHEET 2.

*Fig. 2.*



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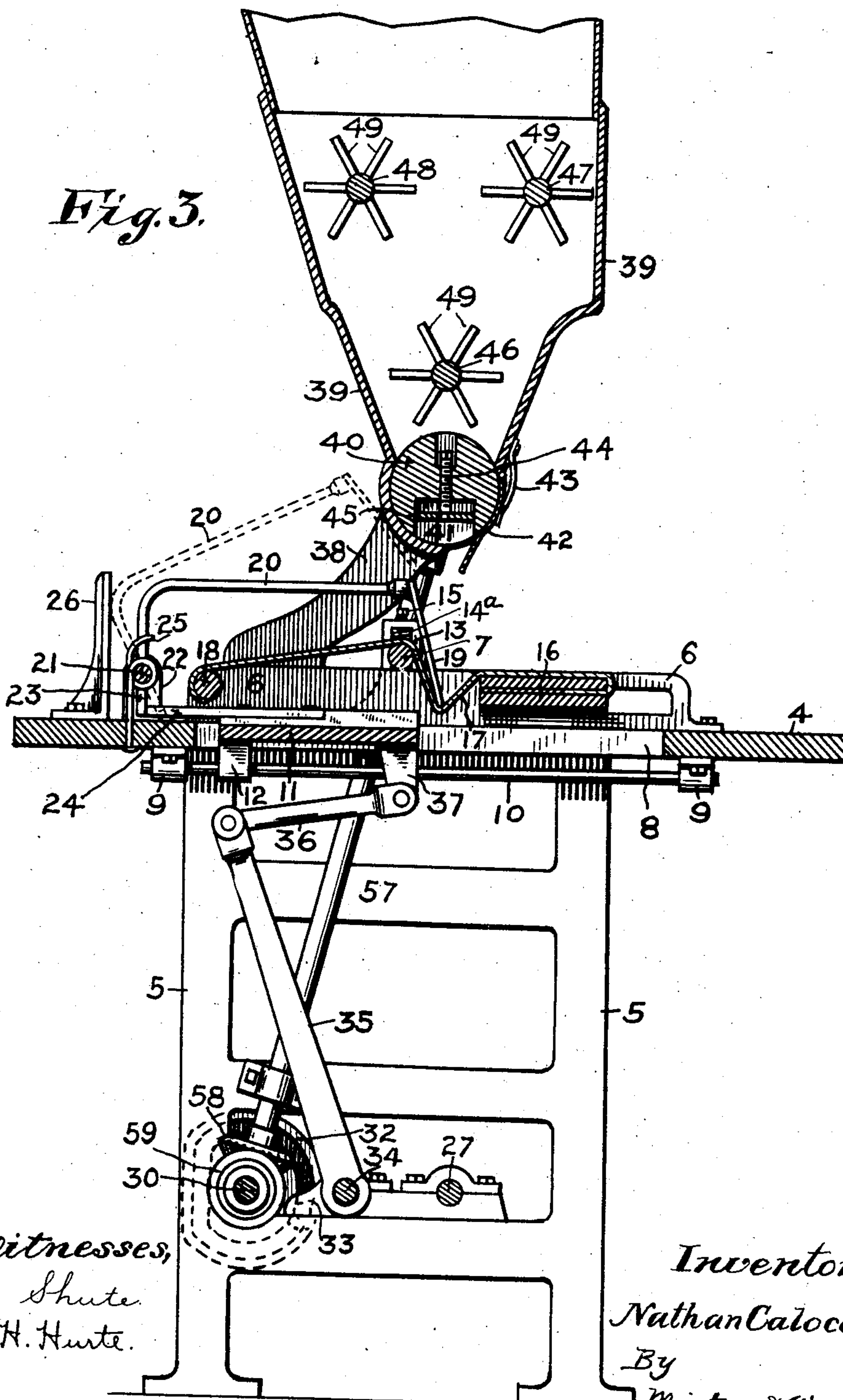
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3 SHEETS—SHEET 3.

*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

NATHAN CALOCOFF, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF  
TO MORRIS KRAUSS, OF INDIANAPOLIS, INDIANA.

## CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 786,247, dated March 28, 1905.

Application filed October 15, 1904. Serial No. 228,593.

*To all whom it may concern:*

Be it known that I, NATHAN CALOCOFF, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Cigar-Bunching Machines, of which the following is a specification.

This invention relates to improvements in machines for the manufacture of cigars, and has special reference to that part of the manufacture known as the making of the "bunches," or the inside part or filling of the cigar which is contained within what is termed the "binder;" and the object of this invention is to provide a machine that will thoroughly mix the filling material and feed it automatically in regulated quantities and wrap it or bind it in the binding-leaf of tobacco, thereby producing a bunch ready for the outside wrapper.

The object is to provide a simple and durable machine, one that is easily operated with safety by an unskilled person of ordinary intelligence.

The objects of the invention are accomplished by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in front elevation of the complete machine, showing the hopper portion in partial vertical section. Fig. 2 is a side elevation of said machine, showing the carriage in which the belt-roller is mounted at or near the forward end of its travel; and Fig. 3 is a vertical central section of the machine on a plane parallel with the sides of the machine.

Like characters of reference indicate like parts throughout the several views of the drawings.

4 is a table which is supported on the legs 5, and bolted upon the top of the table are the two cast-iron parallel plates 6, having horizontal top edges which form tracks to support and guide a roller 7. These plates 6 are parallel with the side dimensions of the table, and formed through the table is a large opening 8, which opening is bridged by the tracks formed by the said plates 6.

Fastened to the under side of table 4 are

the hangers 9, which are approximately under the plates 6. These hangers provide the means for the attachment underneath said table of the guide-rods 10. Mounted on said guide-rods is a metal carriage 11, which has a double pair of depending perforated ears 12, through which the said bars 10 are passed for the purpose of mounting said carriage. This carriage, as shown in Fig. 1, has the vertical standards 13 13, located outside of said plates 6. The standards 13 have longitudinal vertical slots near their upper end, in which the boxes 14 are adjustably mounted. These boxes are perforated to form the bearings for the ends of the roller-shaft 7. Located in the slots between said boxes and the tops of the standards in which the boxes are mounted are springs 14<sup>a</sup>, and passing down through the tops of the standards and bearing against the springs are the set-screws 15, by means of which the tension on the springs is regulated. By means of the above resilient mounting of the boxes the roller supported by said boxes will have a yielding action, which will enable the roller to rise vertically to prevent injury to the fingers of the operator should they be accidentally caught between the roller and an auxiliary table, supported by and located between the plates 6. This table is shown at 16, and upon it the binding-leaf within which the tobacco filling is bunched is placed and the bunch rolled and formed. The table 16 will preferably be in two horizontally-divided parts, as shown in Fig. 3, one of which parts will be adjustable in its proximity to the other to form a clamp between which the ends of an apron 17 will be placed and fastened in the manner as shown in Fig. 3. This apron will pass back over the table 16, form the front edge thereof, and will pass over the roller 7 and thence back to a horizontal cross-bar 18, supported by the plate 6 at the rear ends of the latter, and the apron will be made fast to the said bar 18. The length of the apron will be sufficient to furnish the material for a pocket to be formed therein as a receptacle for the tobacco filling material in the manner as clearly shown in Fig. 3, and in order to insure the formation of this pocket



or receptacle at the right time and place a depressing-plate is provided which moves into contact with the upper surface of the apron and forces it down, so as to form the required pocket out of the fullness of the apron. This plate is shown at 19 and is carried at the end of an oscillating arm 20. The arm 20 is fastened to the horizontal shaft 21, which is supported by ears 22 from the top of the table 4. The under side of the shaft 21 has the lug 23, which extends into the path of a bar 24, fastened to the carriage 11 and reciprocating in the horizontal travel with said carriage, so as to contact with lug 23, thereby rocking its shaft 21 and depressing the arm 20, so as to lower the plate 19 against the apron 17. This operation forms the desired pocket in the apron 17, above referred to. On release of lug 23 by the outward travel of bar 24 the shaft 21 and its arm 20 are moved by the spring 25 into the position shown by the dotted lines in Fig. 3 and in full lines in Fig. 2, which withdraws the plate 19 from contact with the apron and removes it out of interference with the other operations of the machine. A standard 26, secured to the table 4, acts as a stop to determine the movement of the arm 20 as actuated by the spring 25.

Mounted in suitable box-bearings, which are supported by the legs 5, is the shaft 27, on which is mounted the pulley 28, to which power is applied from any suitable motor, and also mounted on shaft 27 is the pinion 29. Mounted in suitable journals, also supported by the legs 5, is a second shaft 30, which is parallel with the shaft 27, and mounted on this shaft 30 is a spur-gear 31, the teeth of which mesh with those of the pinion 29. Mounted on the end of shaft 30 is the casting 32, having a cam-groove to receive a pin carried by crank 33. This crank 33 is mounted on a third shaft 34, parallel with shafts 27 and 30, and mounted on said shaft 34 is an arm 35, which is connected, by means of the link-bar 36, with an ear 37, extending down from the under side of carriage 11. The cam-groove in plate 32 is shaped and positioned so as to cause the carriage 11 to stand normally at the inner end of its travel in a stationary position during most of the time of each rotation of said plate 32 and then by the impulse of said cam to travel out and then back again to this normal position during the remainder of the rotation of said cam-plate.

Mounted on the track-plates 6 adjacent to the rear ends of said plates are the forwardly-bent standards 38, and supported by said standards is the hopper 39, in which the broken tobacco forming the filling material of the bunch is deposited. This hopper terminates at its lower end in a horizontal cylindrical formation in which is revolvably mounted a cylinder 40, which has a longitudinal groove 41 to receive the tobacco filling as the

cylinder in its rotary travel presents this groove under the mass of tobacco in the hopper. The cylindrical casing at the base of the hopper, which incloses the cylinder 40, is open at its lower front portion, so that as the cylinder 40 revolves and its tobacco-filled groove 41 comes opposite this opening said tobacco filling material contained therein will discharge through said opening in the casing and will be deposited by gravity in the apron-pocket immediately below. A partial closure in the form of a door 42, hinged at its upper edge to the hopper 39, will afford means for access to the cylinder 40 for the purposes of adjustment or cleaning. This door, as shown in Fig. 3, has its lower portion bent away from the cylinder, so as to provide a constant discharge-opening, and the door is kept in close contact with the cylinder by the pressure of a spring 43, as shown, which is pivotally secured at its upper end, whereby it may be turned back out of contact with said door when it is desired to open the latter. Passing from the bottom of groove 41 in cylinder 40 are the screw-threaded holes to receive the set-screws 44, and mounted in said groove 41 on the ends of said set-screws is a plate 45, which is adjusted in its distance from the bottom of said groove by means of the set-screw, so as to regulate the capacity of the groove 41 and the quantity of filling material which it can contain and which it deposits at each of its revolutions to form a bunch. Supported by the side walls of the hopper are the shafts 46, 47, and 48, all of which are provided with the radial fingers 49, which by the rotation of said shafts are forced through the mass of filling-tobacco contained in said hopper and serve as mixers to thoroughly mix and blend the said filling material, and they also serve to keep the material in loose condition and from packing and clogging in the hopper. The trunnions from cylinder 40 extend through the sides of the hopper-casing, and one of said trunnions forms the mounting for the cog-gear 50, and mounted on a similar projecting end of shaft 46 is a cog-gear 51, the teeth of which mesh with those of the gear 50. Mounted on each of the shafts 47 and 48 are the cog-gears 52 and 53, respectively, which are geared to each other and with the cog-wheel 51 by means of an intermediate gear-wheel 54. By the train of gears as above described the rotation of the cylinder 40 will set all of said mixer-shafts in corresponding rotation. The rotation of the cylinder 40 is accomplished by the following means: Mounted on the trunnion at the opposite end of the cylinder from the gear 50 is the bevel-pinion 55, which meshes with the bevel-pinion 56 at the upper end of the vertically-oblique shaft 57. Mounted on the lower end of said shaft 57 is the pinion 58, which engages with a pinion 59, mounted on the shaft 30, thereby providing the means for revolu-



bly moving the cylinder 40 and for driving the mixer-shafts, as above described, from said shaft 30.

The operation of my improved machine is as follows: Taking the parts in their position as shown in Fig. 3, the receptacle 41 of cylinder 40 having about completed its discharge of filling-tobacco into the pocket of apron 17, formed in it by the action of plate 19, the carriage 11, having been at its normal position at the inner end of its travel, will start in its outward movement as soon as the groove 41 of cylinder 40 has passed the discharge-opening in its casing. The outward movement of the carriage causes its bar 24 to release the lug 23, and plate 19 will be withdrawn by the action of spring 25, leaving the filling-tobacco at the bottom of the pocket formed in apron 17. The roller 7 will move forward and cause the apron to close in a fold over the filling-tobacco deposited in the pocket. The operator will then place one of the binders on table 16, and the roller, with the apron around it, will roll over this binder and deposit the mass of filling-tobacco in the pocket upon the binder and roll the binder around said filling material by the outward progress of the roller over the table 16 in the manner as shown in Fig. 2. The return of the carriage and roller to their inner normal position will leave the completed bunch lying loose on top of table 16.

Having thus fully described my invention, what I claim as new, and wish to secure by Letters Patent, is—

1. In a cigar-bunching machine, a horizontal table, an auxiliary table above said first table, an apron attached to the front edge of the auxiliary table and passing back over the latter table and supported in a loose condition near the rear of the table, a roller transversely of and under said apron having a horizontal reciprocatory travel in a plane with the top of said auxiliary table and including said auxiliary table in the limits of its movement, means for depressing the apron between the roller and the auxiliary table when the roller is at its normal position at the inner end of its travel to thereby form a receptacle or pocket from said apron, said means being operated by an extension from the roller-carrying means, a hopper located above said pocket having a lower outlet, a revolving cylinder closing said hopper-outlet, said cylinder having a cavity or depression to form a receptacle to receive a regulated quantity of the contents of said hopper at each revolution of the cylinder and to discharge said quantity into the cavity of the apron by the rotation of said cylinder.

2. In a cigar-bunching machine, a table supported on legs, said table having an extended opening, hangers depending from said table, bars supported by said hangers, a carriage supported and guided by said bars, said

carriage having parallel vertical standards which extend up through the opening in said table and said carriage having a rearwardly-extended bar, said standards having vertical slots, boxes mounted in said slots, springs in the slots above the boxes to depress them, set-screws to regulate the tension of said springs, a horizontal roller mounted in said boxes, said roller being gradually reduced in diameter toward its center, an auxiliary table supported above the first table, track-plates supported by said first table and bridging the opening in said first table, said track-plates having a cross-bar at their ends opposite said auxiliary table, an apron attached to said auxiliary bar at one end and extending loosely to and attached to the front edge of said auxiliary table at its other end, a rocking shaft having a lug in the path of said bar which is projected rearwardly from said carriage, an arm fixed to said rocking shaft and extending forward therefrom over said apron and terminating with a plate which when the arm is lowered will depress the apron between the roller and auxiliary table, a spring to elevate the arm, a hopper supported above the apron having an outlet which discharges into the pocket formed in said apron, means to regulate the time and quantity of said discharge, and means to impart a reciprocating movement to said carriage.

3. In a cigar-bunching machine, a table, an apron secured to the front edge of said table and extending back over the table and secured remote from said table at the opposite end of said apron, the apron being full and loose between its end supports, a roller extending transversely of the apron under the apron and having a reciprocating horizontal travel longitudinally of said apron including the area of said table in its travel, means for depressing the apron between the roller and table while the roller is at the inner end of its travel in order to form a pocket in the apron by said depression, a hopper located above the apron having a lower outlet discharging into said pocket, a revolving cylinder closing said hopper-outlet, said cylinder having a cavity to receive a regulated quantity of the tobacco contents of said hopper and deposit it by gravity into said apron-pocket, and a door hinged at its upper edge to said hopper and extending when closed down in contact with a front portion of said cylinder, said door remaining closed during the operation of the machine and having that portion of it above its lower edge including said edge bent out away from said cylinder to provide a permanent opening opposite the lower part of the cylinder.

4. In a cigar-bunching machine, a table, a roller having a horizontal reciprocating movement covering the area of said table during the forward or outer portion of the travel of said roller, an apron having one of its ends fastened to the front edge of the table and ex-



tending back over the table and over the roller and having its other end fastened on the opposite side of the roller from the table, said apron being loose between its ends, a plate adapted to move down against the apron and depress it between the roller and the table to form a pocket, a hopper supported above the apron having a bottom outlet over said pocket, a horizontal cylinder revolubly mounted so as to form a closure to said outlet, a longitudinal groove in said cylinder, a false bottom in said groove adjustable radially of the groove to regulate its holding capacity, a door hinged to the front of the hopper and closing the upper front portion of the hopper-outlet, said door having its lower portion bent outwardly away from the cylinder, horizontal shafts passing through the hopper above the cylinder and parallel therewith, said shafts having radial fingers, means providing a driving connection between the said shafts and the cylinder whereby the rotary movement of the cylinder will be transmitted to said shaft, means for rotating the cylinder and means for intermittently moving said roller in its horizontal reciprocating travel.

5. In a cigar-bunching machine, a horizontal table supported on legs, said table having an extended opening approximately through its middle portion, track-plates secured to said table and bridging said opening, hangers on the under side of said table approximately under said track-plates, guide-bars secured in said hangers, a carriage slidingly mounted on said guide-bars, standards from said carriage extending up through the opening in the table on the outside of said track-plate, said standards having longitudinal end slots, boxes adjustably mounted in said slots, springs to press said boxes downwardly, set-screws to adjust the tension of said springs, a roller resting upon said track-plate having bearings in said boxes, said carriage having a rearwardly-extended bar, an auxiliary table supported between the front ends of said track-plates by the plates, an apron having one end fastened to the front edge of the auxiliary table and its other end fastened to a cross-bar at the rear ends of said track-plates, said apron passing loosely over the table and over said roller, an arm pivoted beyond the rear end of said apron and extending above and forward to near the middle of the apron and having a downwardly-projected end plate or extension, a spring to normally elevate the arm, a lug extending into the path of said bar extension from the rear of the carriage, said lug being integral with said arm, a hopper above the apron having an under-discharge end, means for regulating the time and quantity of the discharge from said hopper and means for reciprocating said carriage.

6. In a cigar-bunching machine, a table, a horizontally-reciprocating and intermittently moving roller which covers the area of said

table at each forward end of its travel, a carriage having standards which support said roller, said carriage having a rearwardly-extended bar, a rock-shaft having a lug in the path of said bar and also having a forwardly-projected arm terminating with a downward extension, a spring to normally elevate the arm, an apron fastened at one of its ends to said table and passing back over the table and over said roller and having its other end secured between said roller and said rock-shaft, and a hopper to contain the filling-tobacco located above the table and having a discharge-opening, and means for regulating the time and amount of said discharge.

7. In a cigar-bunching machine, a table supported on legs and having a middle opening, hangers depending from said table, guide-bars secured to said hangers, a carriage moving on said guide-bars, said carriage having standards which extend through said table-opening, an auxiliary table above the first table, a horizontal roller mounted on said carriage-standards and adapted to cover the area of the table in a part of its travel, an apron fastened to the auxiliary table at its front end and passing back over the table and over the roller and fastened at its rear end so as to be in a loose condition between its ends, means when the roller is at the inner end of its travel for depressing the apron between the roller and auxiliary table to form a pocket, said means being controlled from said carriage, a hopper above the apron to contain the filling-tobacco and having a discharge by gravity into said pocket, the discharge-opening of the hopper having a valve mechanism to automatically control the time and quantity of each discharge, and means for reciprocating said carriage, said means comprising a rotating plate having a cam-groove in its side, a shaft adjacent to said plate having a crank, said crank having a pin seated in said cam-groove, said shaft also having an arm, and a link-bar connecting said arm with an ear depending from said carriage.

8. In a cigar-bunching machine, a horizontal table having a middle opening, legs to support said table, track-plates secured to the top of the table and bridging said opening, an auxiliary table supported between the front ends of said track-plates, hangers depending from the first table approximately under said track-plates, guide-bars mounted in said hangers, a carriage mounted on said guide-bars having vertical standards which extend through the opening in the table outside of said track-plates, a horizontal roller having its bearing on said track-plates, said roller being mounted in said standards, means for permitting a vertical adjustment of said roller in said standards, a bar extending to the rear from the back of said carriage, an apron having one end fastened to the front edge of the auxiliary table, said apron passing back over the aux-



iliary table and over said horizontal roller and having its opposite end made fast to a cross-bar supported by rear ends of said track-plates, a rock-shaft mounted in a horizontal position  
5 back of said last-mentioned cross-bar, said rock-shaft having an arm which extends upwardly and forwardly over said apron and terminates with a downward extension or head to depress the apron between the roller and  
10 auxiliary table when the roller is at the inner end of its travel, a spring to normally raise the said arm, a lug extending from said rock-shaft into the path of the bar from the rear of the carriage, a shaft supported by the table-legs having a plate with a cam-groove in  
15 its side, a second shaft parallel with the first one, a crank on said shaft having a pin entering said cam-groove, an arm on said second shaft, a link-bar connecting the end of said  
20 arm with an ear on the under side of said carriage, a hopper supported above said apron

from said track-plates, said hopper containing the tobacco filling material and having a bottom opening which discharges into the pocket  
formed in said apron, a cylinder revolubly 25 mounted below said opening to form a closure therefor, said cylinder having a groove with a radially-adjustable false bottom, shafts supported by said hopper parallel with and above  
said cylinder, said shafts having radial fingers 30 to act as stirrers to stir the tobacco filling material, suitable gears connecting said shafts with each other and with the trunnions of said cylinder, and means for continuously rotating said cylinder. 35

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 21st day of September, A. D. 1904.

NATHAN CALOCOFF. [L. s.]

Witnesses:

JOSEPH A. MINTURN,  
MORRIS KRAUSS.