

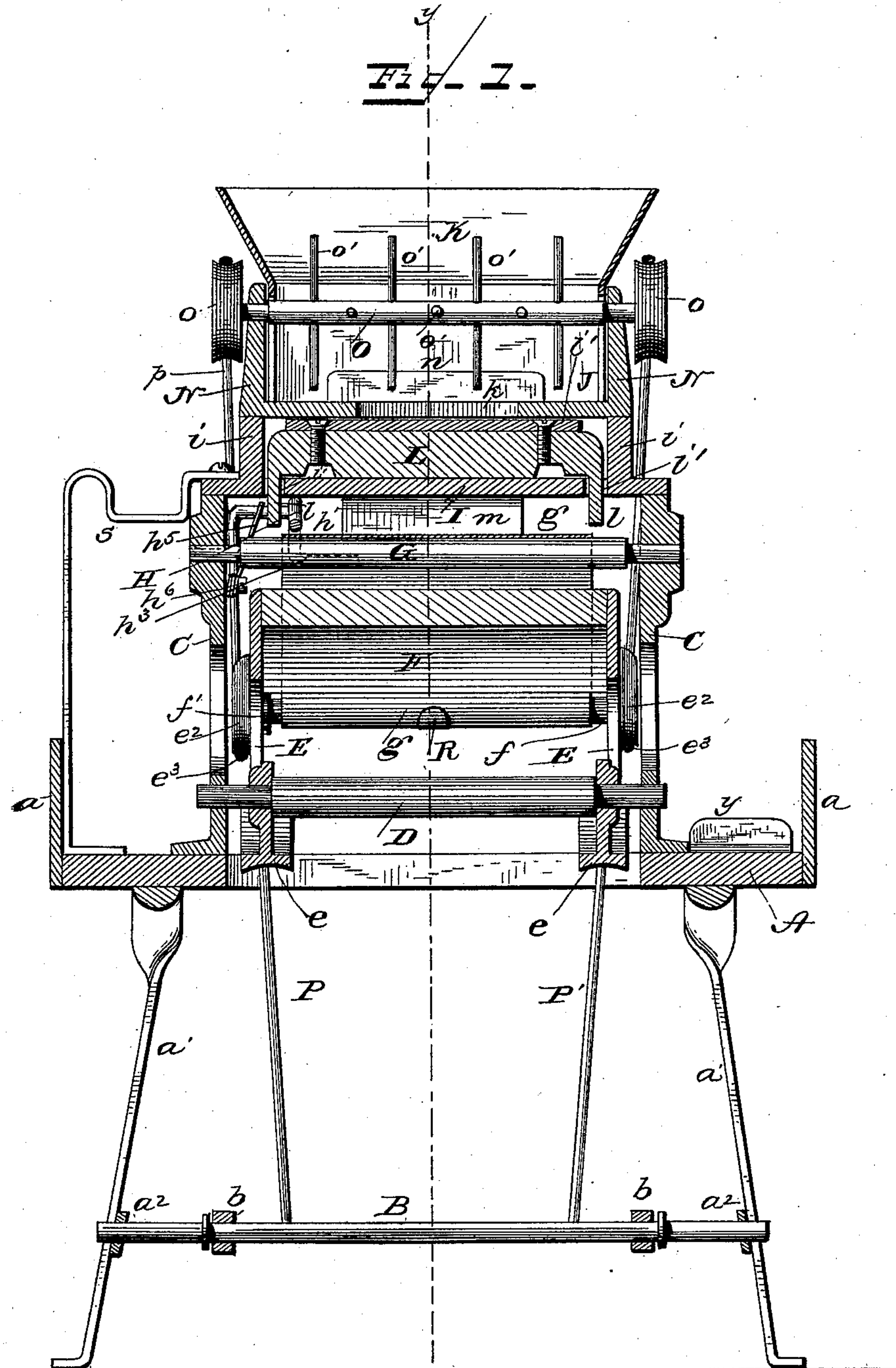
(No Model.)

5 Sheets—Sheet 1.

C. BECKERT.
CIGAR BUNCHING MACHINE.

No. 364,701.

Patented June 14, 1887.



WITNESSES

Frank L. Ourand
Wm. H. Doolittle

INVENTOR

Charles Beckert
per R. G. D. Boig
his Attorney.

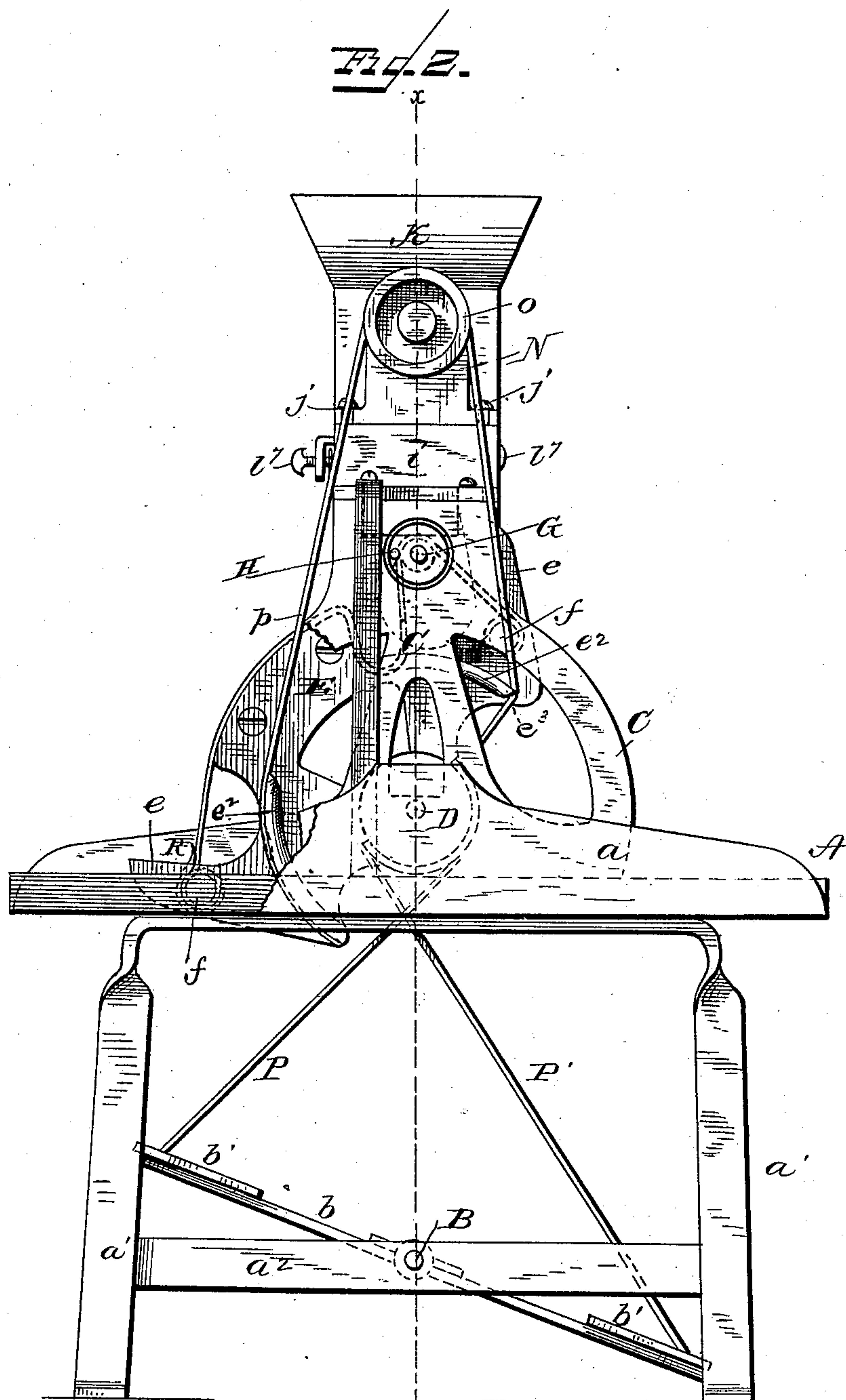
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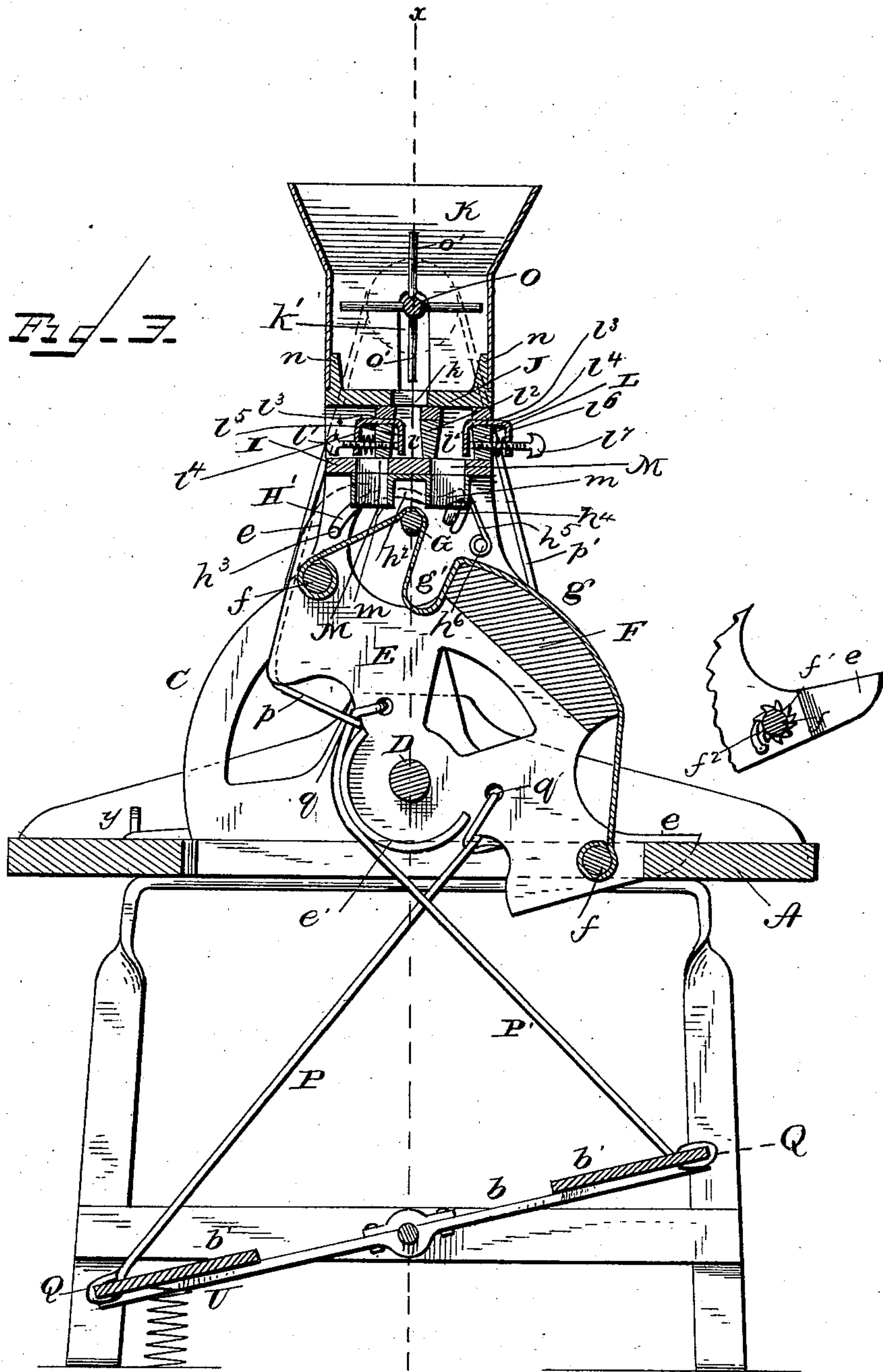
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Fig. 4-1

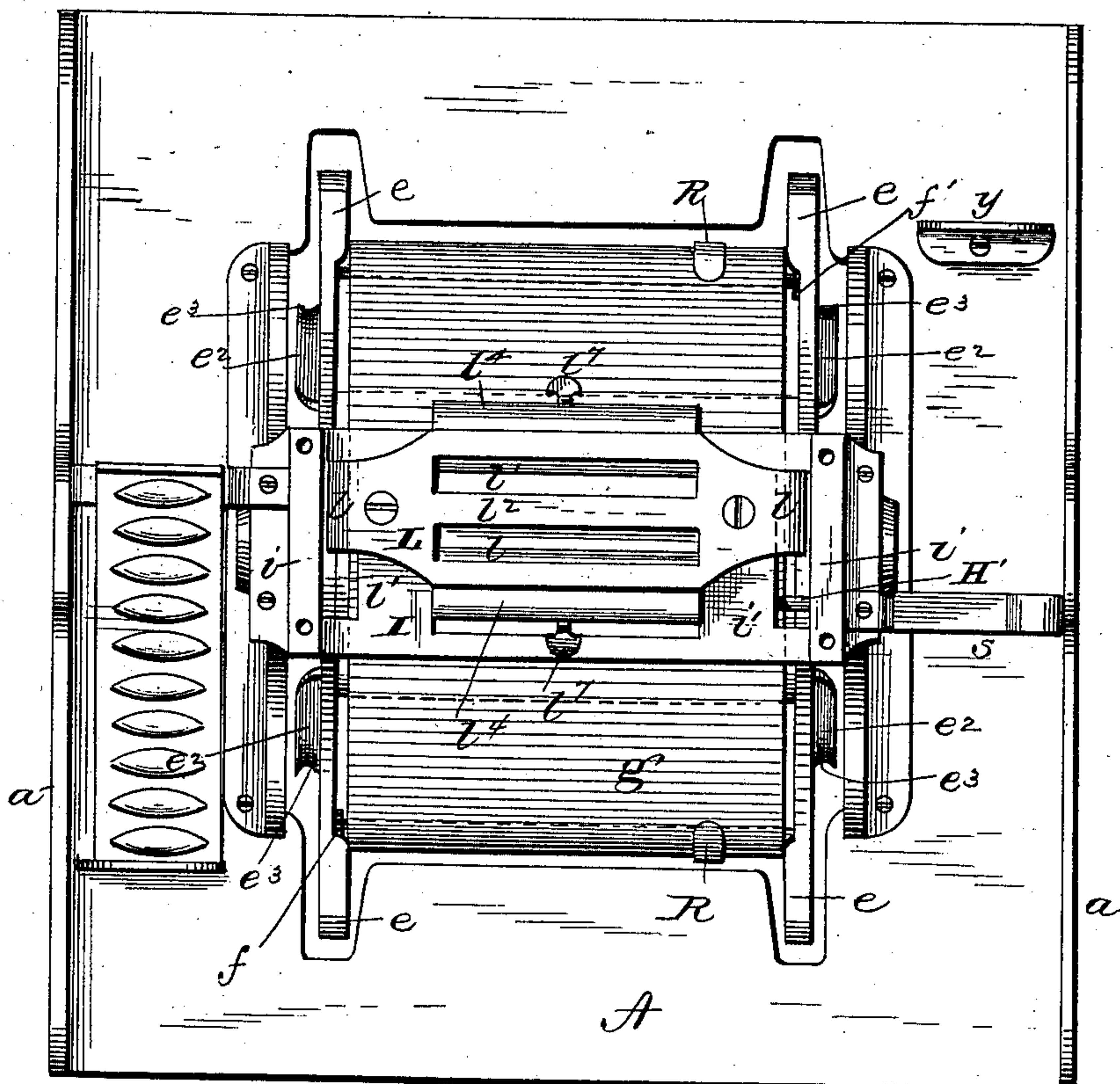
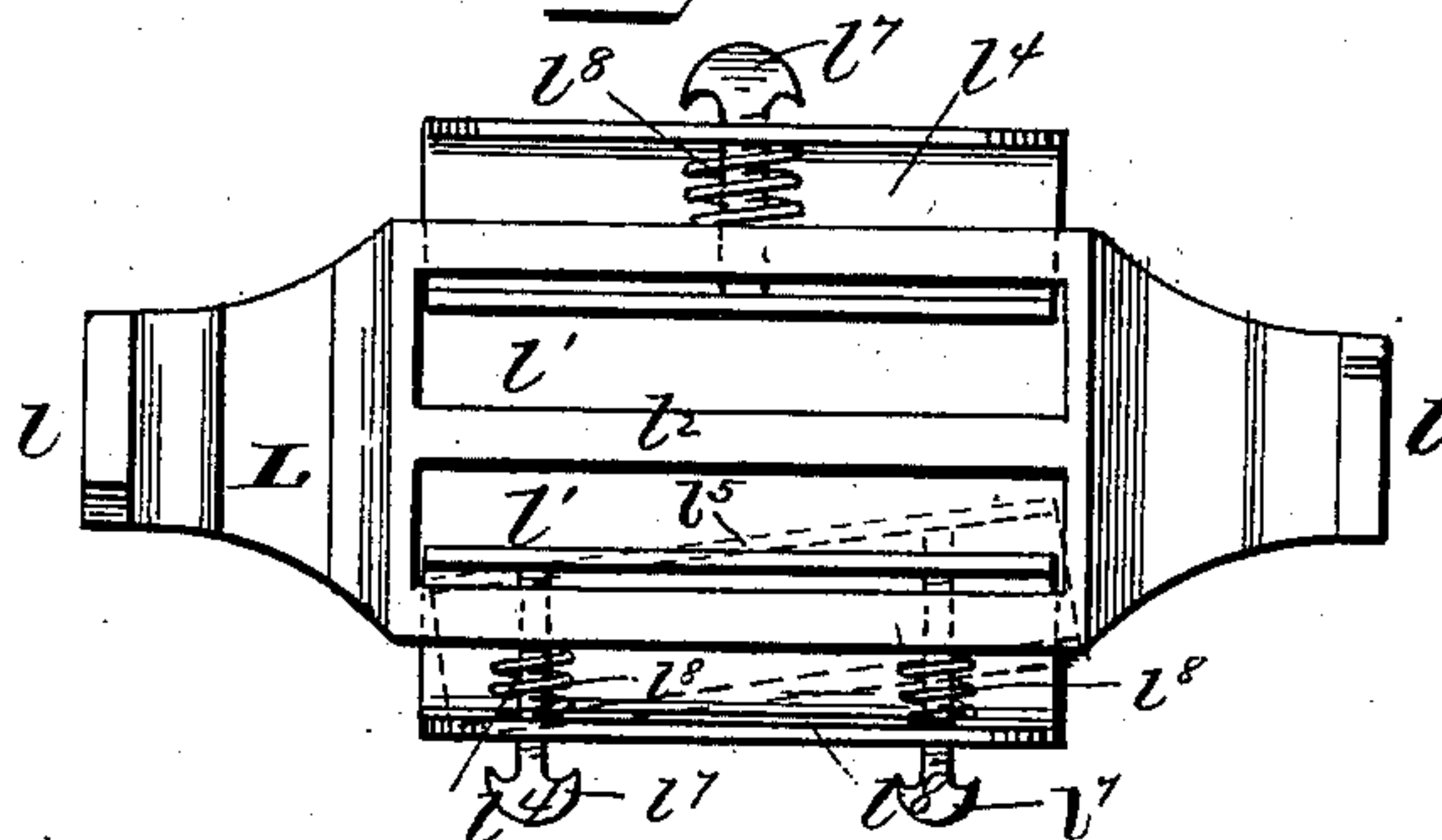


Fig. 5.



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(No Model.)

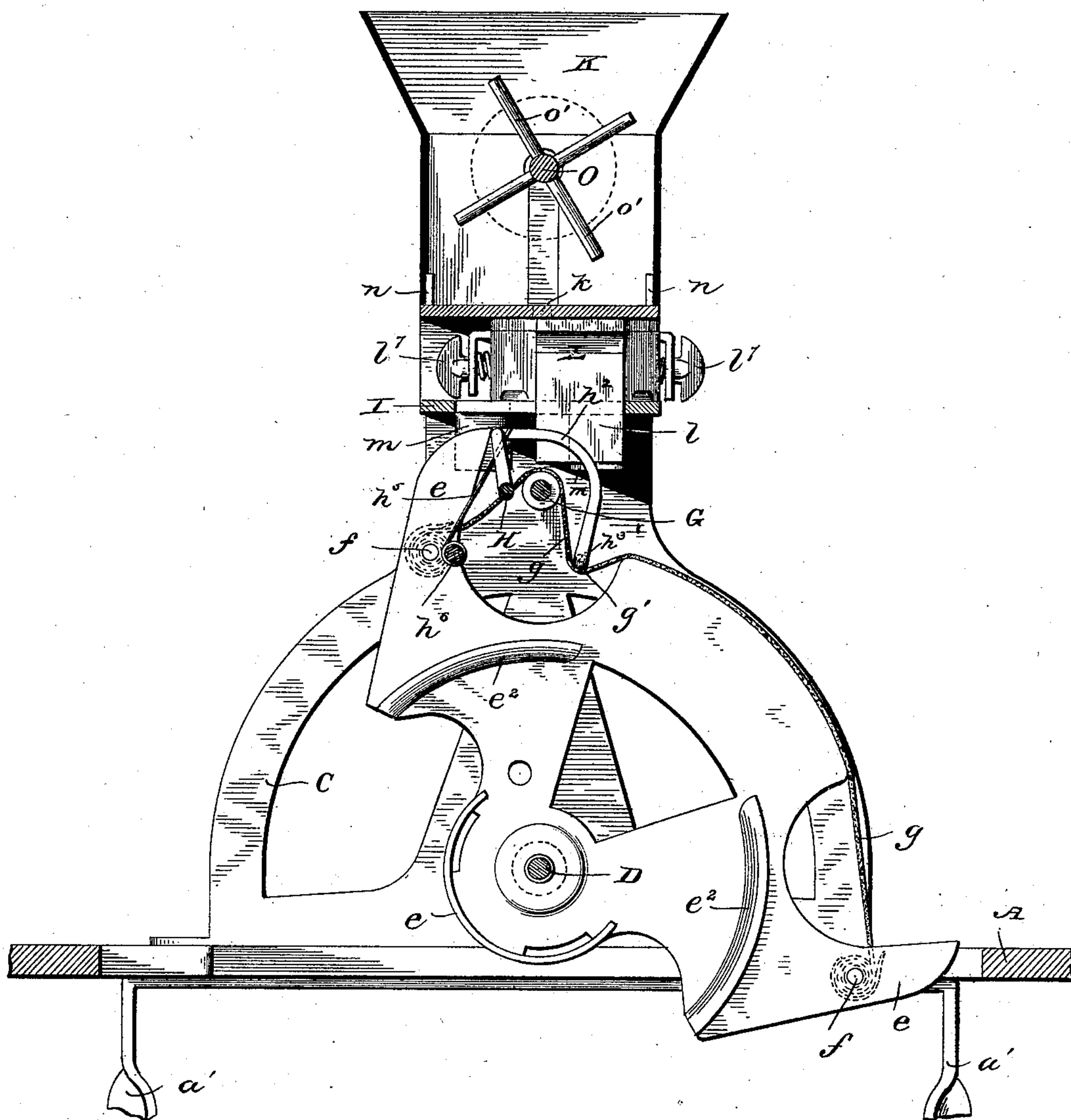
5 Sheets—Sheet 5.

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Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES BECKERT, OF ALLEGHENY, PENNSYLVANIA.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 364,701, dated June 14, 1887.

Application filed February 23, 1887. Serial No. 228,464. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BECKERT, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Cigar-Bunching Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in cigar-bunching machines.

In a pending application, Serial No. 206,067, filed on the 24th day of June, 1886, a machine is shown and described in which a rolling-table is adapted to reciprocate beneath a stationary roller. A rolling-apron is secured to the opposite sides of the table and passed over the stationary roller, and pocket-forming devices serve to form a pocket first at one end of the apron and then at the opposite end, whereby two operators, sitting on opposite sides of the machine, are enabled to co-operate in rolling a cigar-bunch at each stroke of the reciprocating table. These, together with certain other features of my accompanying application, which may be shown and described therein, are disclaimed in the present application.

The object of my present invention is to provide a machine of the same general character as that described in my pending application above referred to, but which shall be more simple in construction and adapted to general use in the manufacture of cigar-bunches of various sizes and shapes.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section taken centrally through the machine in a plane transverse to the path in which the rolling-table reciprocates, the rolling-table being represented at mid-stroke. Fig. 2 is a view in end elevation showing, partly in dotted lines, the rolling-table at the end of its stroke in one direction, a cigar-bunch being discharged from the apron on one side of the stationary roller and a bunch-receiving pocket being formed on the opposite side of the roller. Fig. 3 is a view in vertical section taken cen-

trally through the machine in a plane parallel with the path in which the rolling-table reciprocates, and showing the rolling-table at the end of its stroke in the opposite direction from that shown in Fig. 2, and the other movable parts in corresponding positions. Fig. 4 is a top plan view of the machine with the feed-hopper removed, showing the feed-carrier in position to receive tobacco from the hopper in one of its pockets and to discharge its load from the opposite pocket into the apron. The rolling-table is here represented at mid-stroke. Fig. 5 is a detached view of the feed-carrier, showing the means for regulating the size of its pocket. Fig. 6 is a side elevation of the pocket-forming and feed mechanism, looking at the machine upon the side opposite that shown in Fig. 3.

A represents a supporting-table, preferably of rectangular form, and provided with upwardly-extending flanges *a* on its ends. The table A is supported on legs *a'*, each end pair being connected a short distance above their lower ends by girders *a''*.

A shaft, B, connects the middle portions of the girders *a''*, and on the shaft B the arms *b* are loosely mounted and have the foot-rests *b'* secured to their corresponding opposite ends, forming a double treadle for imparting motion to the movable parts of the machine, and capable of being actuated from either side of the machine.

The central portion of the supporting-table A is cut away to admit of the reciprocating movement of the rolling table and apron and the mechanism for actuating them. The opening in the said table is preferably of rectangular form, and to the table along the ends of the opening are secured upwardly-extending supporting-brackets C. Near the bases of the brackets C, and centrally located, the ends of a rock-shaft, D, are journaled, and to the rock-shaft D, between the brackets C, the rolling-table supports E are secured; or the supports E might be loosely mounted on the shaft D and the shaft rigidly secured in the brackets C; or the shaft D might be journaled in the brackets C and the supports E loosely mounted on the shaft, the object being to afford the supports E, carrying the rolling-table, a free reciprocating movement.

In the machine herein shown and described

the reciprocating movement will be in a curved path, as will hereinafter appear.

The supports E are similar in construction and each has the general form of a sector of a circle, subtended by ninety degrees, more or less, of arc, but is preferably made skeleton to economize material and reduce its weight, and is provided with certain important conformations, which will be particularly pointed out. The supports are secured to or mounted on the shaft D at points near their vertices, and are intended to be reciprocated through an arc of about ninety degrees, and when at the middle point of the stroke in either direction they are supposed to extend upwardly from the shaft D, one-half on each side of a vertical plane passed through the longitudinal axis of the shaft D.

The rolling-table F is of curved form in cross-section, and is secured between the upper curved ends of the supports E, occupying a central position between the extremities of said ends.

Between the edges of the rolling-table F and the extremities of the upper ends of the supports E the said supports are cut away, as shown, and at the extremities they are provided with prongs or arms e , the ends of which project outwardly from the shaft D beyond the path of the projected surface of the table F, for purposes which will hereinafter appear.

The ends of the supports E, below the shaft D, are provided with flat-faced circular rims e' , a semi-circumference or more in length, to form suitable bearings for the actuating-band, and the outer faces of the said supports E are provided with curved-faced lugs or flanges e'' , extending from the opposite edges of the supports toward the middle of each support, to form bearings for the actuating-band which drives the stirrer in the hopper. The outer ends of the lugs or flanges e'' are conveniently grooved, as shown at e''' , to hold the bands in place.

In the upper ends of the brackets C a roller, G, is journaled in such a position relatively to the rolling-table F that there will be space enough between the roller and the face of the table to admit freely a double thickness of the rolling-apron g . The apron g is secured at its ends to rods or bars f , secured in rotary adjustment between the corresponding edges of the supports E in the projected plane of the rolling-table. The rods or bars f are each provided with a ratchet-wheel, f' , with which pawls f'' engage for the purpose of taking up slack in the apron. The apron passes over the roller G, and is allowed sufficient slack to form a bight or bunch-receiving pocket, g' , between the edge of the rolling-table and the bar f .

In operation the bight or pocket g' is formed by means of what is conveniently termed a "pocket-forming arm," H, which consists of a rod secured at one end in rocking adjustment in the upper end of the bracket C, and on the opposite side of the roller G from that

on which the bight or pocket is to be formed. From a point at or near the inner face of the bracket C the said arm extends at first a short distance away from the roller G, as shown at h , thence over the edge of the apron g , as shown at h' , thence in curved form over the roller G, as shown at h'' , and thence toward the center of the apron, as shown at h''' . The portion h''' is that which is adapted to engage the apron and depress it to form the bunch-receiving pocket. A similar pocket-forming arm, H', is secured in the opposite support C, and is adapted to form a bunch-receiving pocket on the opposite side of the roller G from that on which the arm H forms it.

When thrown back out of engagement with the apron, the arms H H' rest in contact with lugs or pins h^4 on the inner faces of the brackets C, and the said arms are normally held in such backward adjustment by the tension of springs h^5 , the latter consisting in the present instance of spring-metal rods coiled around studs h^6 , which project from the inner faces of the brackets and have their free ends in engagement with the portions h' of the arms.

As the supports E, and hence the table F, are rocked in either direction, in the manner which will be hereinafter fully set forth, one of the arms e , just before the completion of the stroke, will engage the portion h' of the arm H or H', and as the stroke is continued to completion will rock the arm H or H' against the tension of the spring h^5 over the roller G, and will force the portion h''' into engagement with the apron, and thereby form the bunch-receiving pocket, as shown in Fig. 6.

A short distance above the roller G the floor I of an open-sided chamber is located. The ends of said floor preferably rest on the tops of the brackets C, as shown, and are firmly secured thereto. From the floor I, near its extreme ends, the end walls, i , of the open-sided chamber are secured; or they may be formed integral with the floor, if found desirable. The top J of the said chamber forms the bottom of the feed-hopper K, and is removably secured to the ends i by means of screws j or other suitable fastenings.

A feed-carrier, L, is adapted to slide back and forth on the floor I within the open-sided chamber, its motion being transverse to the longitudinal axis of the roller G. The carrier L fits loosely between the floor I and top J, and is limited in its transverse movements by means of downwardly-projecting end lugs or arms, l , which project through elongated slots i' in the floor, and are constructed to travel freely therein. The arms l also project far enough below the floor I and in such positions relatively to the paths of the arms e and the portions h' of the pocket-forming rods that as the supports E, and hence the table F, approach the limit of their stroke, the arm e and portion h' , located on the same side of the roller G, and at opposite edges of the apron, will simultaneously engage the corresponding edges of the arms l , and thereby force the car-

rier L toward the opposite edge of the floor from that which it occupied.

The carrier L is provided with two elongated pockets, l' , separated by a middle partition, l^2 , the top of said partition l^2 being of such construction as to form a clean cut-off of feed from the hopper when the carrier is forced to travel. The pockets l' are constructed to alternately register with the discharge-opening k in the bottom of the hopper as the carrier reaches the limits of its successive strokes, and are intended to determine the amount of tobacco which shall be bound to form the bunch.

To adapt the mechanism to general use in manufacturing cigars of various sizes and shapes, the pockets l' may be enlarged or reduced at pleasure, and their shape may be materially changed, as follows: Near the upper outer edge of each pocket is a narrow slot, l^3 , extending through the wall of the pocket. Through the slot l^3 extends a plate, l^4 , which is attached to a plate, l^5 , the latter forming the outer wall of each pocket; or the plate l^4 might be bent or cast to form the wall l^5 . At such a distance from the plate l^5 as to afford the desired adjustment the plate l^4 is provided with a downwardly-extending flange, l^6 , through which a pair of adjusting-screws, l^7 , extend, the points of the screws being constructed to engage threaded perforations in the side of the carrier. Springs l^8 between the flanges l^6 and the sides of the carrier serve to hold the wall l^5 as far from the opposite wall of the pocket as the screw or the construction will admit of, and cause the said walls to travel away from their opposite walls, and hence enlarge the pockets as fast as the screws l^7 are turned out.

It will be observed that by setting the screws at different adjustments the wall l^5 may be caused to approach nearer its opposite wall at one end than at the opposite end, and thus not only regulate the size of the bunch, but its shape also. Moreover, as the pockets l' are regulated independently of each other, the one may be set to form bunches of a small cigar of a certain shape and the other to form a large cigar of the same or a different shape, and the different styles of cigar be manufactured alternately on the same machine.

The pockets l' are open at the top and bottom, the floor I forming the bottom while they are being alternately filled. Through the floor I, on opposite sides of the roller G, are openings M, corresponding in size and shape to the cross-sections of the pockets l' , and from their lower edges spouts m project downwardly, to convey the tobacco which is to form the bunch into the pocket formed in the apron.

The top J, on which the hopper K is supported, is provided with a pair of ears or brackets, N, extending upwardly, one from each end, and forming stays to hold the hopper against endwise displacement, and also forming supports for the bearings in which the stirrer-shaft O is journaled. The top J is also provided with lugs or flanges n , located near

its side edges, inside the walls of the hopper, to prevent lateral displacement of the hopper. The ends of the hopper are provided with narrow open slots k' , adapted to receive the shaft O, and the hopper is thus rendered removable without disturbing other parts of the machine.

The stirrer-shaft O projects outwardly from its bearings in the ears N, and has secured on its projecting ends the grooved-faced pulleys o . Within the hopper the shaft O is provided with stirrer-arms o' , projecting laterally therefrom, and adapted, by their contact with the tobacco within the hopper, to keep it loosened up and prevent it from forming a bridge over the discharge-opening.

P P' represent the bands which actuate the rolling-table, and $p p'$ the bands which actuate the stirrer. Although the bands P p may be formed of a continuous piece of flexible material, as shown in the drawings, they are essentially two bands, as there is no play allowed at the points where they connect with the support E.

The band P extends from points Q, at the outer edges of and near the corresponding ends of the foot-rests of the treadle, to points q on the support E on opposite sides of and slightly above the shaft D, the two parts of the belt being crossed to give the rolling-table the desired stroke by a downward pressure on the treadle. The band p extends from the points q on the supports E up and over the pulley o on the end of the shaft O, passing over the ends e^3 of the flanges e^2 .

The bands P' p' are arranged at the opposite end of the machine in a manner quite similar to that above described in reference to the bands P p .

The double arrangement of actuating-bands is preferable, as it serves to balance the strain and cause the machine to work steadily. It might, however, be operated by a single set, if such arrangement were found desirable.

To operate the machine, an operator is located on each side of the machine, and, supposing the parts to occupy the position shown in Fig. 2, with the tobacco just discharged from the carrier into the pocket in the apron, he presses down on the treadle on that side of the machine on which the bunch-receiving pocket is formed in the apron, and thereby rolls the bunch, which is discharged as the apron is straightened at the end of the stroke. Just as the stroke is completed the pocket is formed in the apron on the opposite side of machine, the carrier forced over, and a charge of tobacco to form a bunch is discharged on the other side of the roller G, to be rolled by the downward pressure on the treadle by the operator on the opposite side. To catch the bunches as they are discharged from the machine, I find it convenient to secure spring-clips, as shown at R, onto the bars f at the ends of the apron.

Another feature of my invention is the provision for supporting the boards or trays in which the bunches are placed as they are taken

from the apron. My board or tray supports consist of a bar of metal or other suitable material secured at one end to the bracket C, at or near its upper end, and extending thence
 5 outwardly, as shown at S, in such form as to afford a rest and edge guides for the upper end of the tray, and thence extending downwardly to the table, to the end flange of which its lower end is secured. On the table-bed, at a proper
 10 distance toward the operator to give the tray the desired slant, a foot-rest, *y*, is secured, adapted to prevent the tray from sliding out of place. A similar support is also provided on the opposite end of the machine, for the
 15 convenience of the other operator.

To adapt the machine to use as a single machine, I provide a spring, U, in engagement with the pedal and table-bed or floor on one side of the machine, the tension of which will
 20 be sufficient to return the pedal on its side to its depressed adjustment. The pocket in the carrier on the opposite side of the carrier from the operator should for this purpose be closed.

It is evident that many slight changes might
 25 be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

1. In combination, a stationary roller journaled in a suitable supporting-frame, a rolling-table adapted to be reciprocated in a
 35 curved path beneath the roller, rods or bars secured to the rolling-table supports on opposite sides of the table and at intervals from the edges of the working-face of the rolling-table, and a rolling-apron having its ends secured to
 40 the said rods or bars and passing over the stationary roller, substantially as described.

2. In combination, a supporting-frame, a stationary roller journaled therein, a shaft secured on the frame beneath the roller, a pair
 45 of rolling-table supports mounted on the shaft, rods or bars secured in the corresponding edges of the supports on opposite sides, a rolling-table secured to the supports midway between
 50 the said rods or bars, a rolling-apron secured to the rods or bars and extending over the stationary roller, and means for rocking the rolling-table supports, and thereby reciprocating the working-face of the rolling-table wholly
 55 from one side of the stationary roller to the opposite side, substantially as described.

3. In combination, a stationary roller journaled in a suitable supporting-frame, a rolling-table adapted to be reciprocated beneath
 60 the roller, the table-supports provided with means whereby pocket-forming spaces are formed along the opposite sides of said table, a rolling-apron passing over the stationary roller and adapted to move with the rolling-
 65 table, and a feed-hopper provided with openings leading to points on opposite sides of the stationary roller, substantially as described.

4. In combination, a reciprocating rolling-table provided with means whereby pocket-forming recesses are formed along the opposite
 70 sides of the table, a rolling-apron, a stationary roller over which the rolling-apron passes, a feed-hopper, and a feed-carrier located within a chamber between the feed-hopper and the stationary roller, said chamber being provided
 75 with openings adapted to conduct the tobacco from the feed-carrier to opposite sides of the stationary roller, substantially as described.

5. In combination, a suitable supporting-frame, a stationary roller journaled therein, a
 80 reciprocating rolling-table, a rolling-apron, a feed-hopper, a feed-carrier located between the feed-hopper and the rolling-apron, and having a limited movement transversely to the longitudinal axis of the stationary roller, and a carrier-support provided with openings leading
 85 from the carriers to points above different portions of the rolling-apron, substantially as described.

6. In combination, the rolling table and
 90 apron, the stationary roller over which the apron extends, the carrier-support with openings leading to opposite sides of the stationary roller, the movable carrier with its tobacco-receiving pockets, and its downwardly-extending
 95 end lugs adapted to project through slots in its support, and the feed-hopper, substantially as described.

7. In a cigar-bunching machine, the combination, with a feed-hopper bottom provided
 100 with upwardly-extending side and end lugs or flanges and a stirrer-shaft journaled in the end lugs above the bottom, of a hopper provided with open slots at its ends to receive the stirrer-shaft, the sides of the hopper being
 105 adapted to engage the side flanges or lugs on the bottom and the ends of the hopper adapted to engage the end flanges or lugs on the bottom, whereby the hopper is secured on the bottom and made removable, substantially as
 110 described.

8. In combination, a suitable supporting-frame, a pair of rolling-table supports secured to the frame, a rolling-table, a rolling-apron, a stationary pocket-forming roller, a pocket-forming
 115 arm pivoted at one end in a stationary support, and an arm on the rocking rolling-table support adapted to engage the pocket-forming arm and rock its free end into engagement with the rolling-apron, substantially
 120 as described.

9. In combination, a suitable supporting-frame, a rolling-table support secured to the frame, a rolling-table, a rolling-apron, a stationary pocket-forming roller, a pocket-forming
 125 rod or arm pivoted at one end in a stationary support, an arm on the rolling-table support adapted to rock the pocket-forming arm in one direction, and a spring adapted to rock the said arm in the opposite direction,
 130 substantially as described.

10. In combination, a suitable supporting-frame, a rolling-table support secured to the frame, a rolling-table, a rolling-apron, a pocket-

et-forming roller, a feed-carrier having downwardly-projecting lugs or arms, and arms on the rolling-table support, adapted to engage the lugs or arms on the carrier, and thereby
5 move the carrier at the proper time, substantially as described.

11. In combination, the rolling-table supports secured to the supporting-frame, the stationary roller, the rolling-table, the rolling-
10 apron, the feed mechanism, the stirrer-shaft with its actuating-pulley, the double treadle, and the actuating-bands leading from the treadle to the rolling-table support and from the rolling-table support to the stirrer-shaft,
15 substantially as described.

12. In combination, the rolling-table support provided with band-bearings projecting from its face at its opposite edges, the stirrer-shaft with its actuating-pulleys, means for
20 rocking the roller-table support, and bands leading from points on the opposite edges of rolling-table support upwardly over the ends

of the said band-bearings, and thence over the pulleys on the stirrer-shaft, whereby the said bands become slackened and tightened as the
25 rolling-table support nears, respectively, the limit or the middle of its stroke, substantially as described.

13. In combination, the rolling-table adapted to be rocked alternately to opposite sides of
30 the machine, the pocket-forming roller, the rolling-apron, the double treadle, the bands connecting the double treadle with the rolling-table support, and the detachable treadle-operating spring, whereby the machine may be
35 converted into a double or single machine at pleasure, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES BECKERT.

Witnesses:

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CHAS. J. WEITERSHAUSEN.