

No. 630,520.

Patented Aug. 8, 1899.

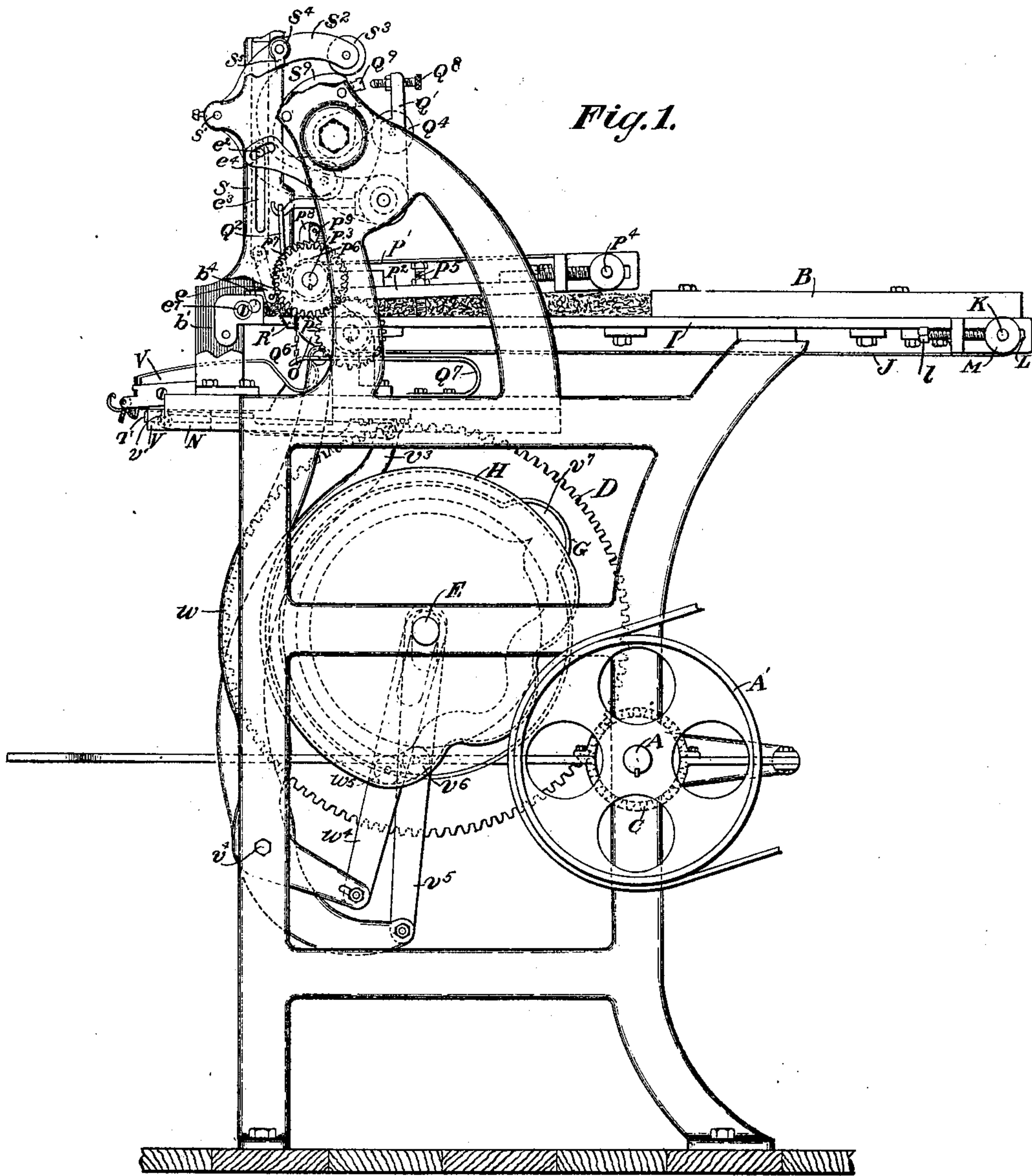
E. PISKO.

CIGAR BUNCH MAKING MACHINE.

(Application filed Mar. 18, 1898.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses:
Geo. B. Rowley.
Harold Lewis.

Inventor:
Emanuel Pisko
By
Dyrmann & Harmon
Attorneys.

No. 630,520.

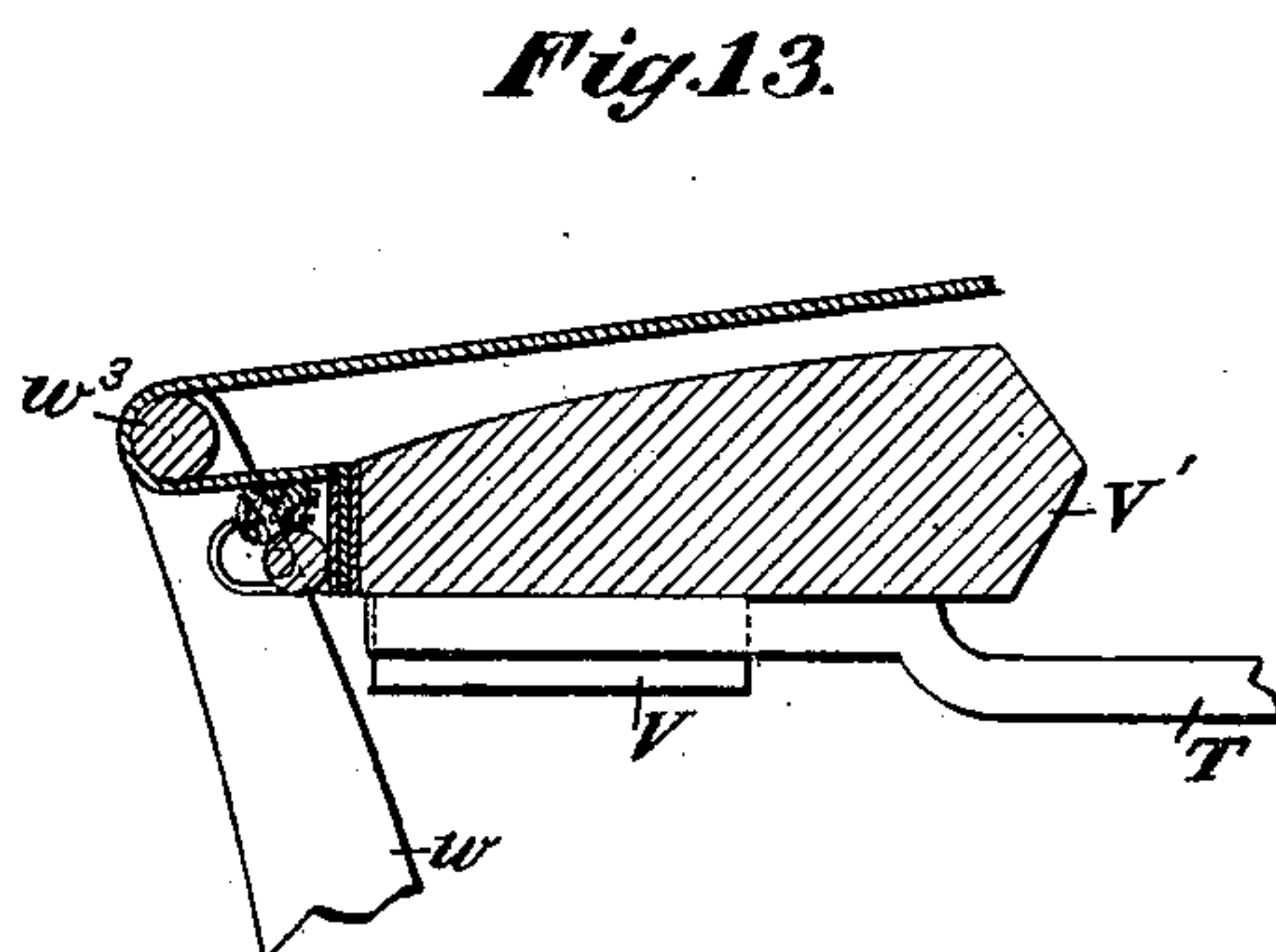
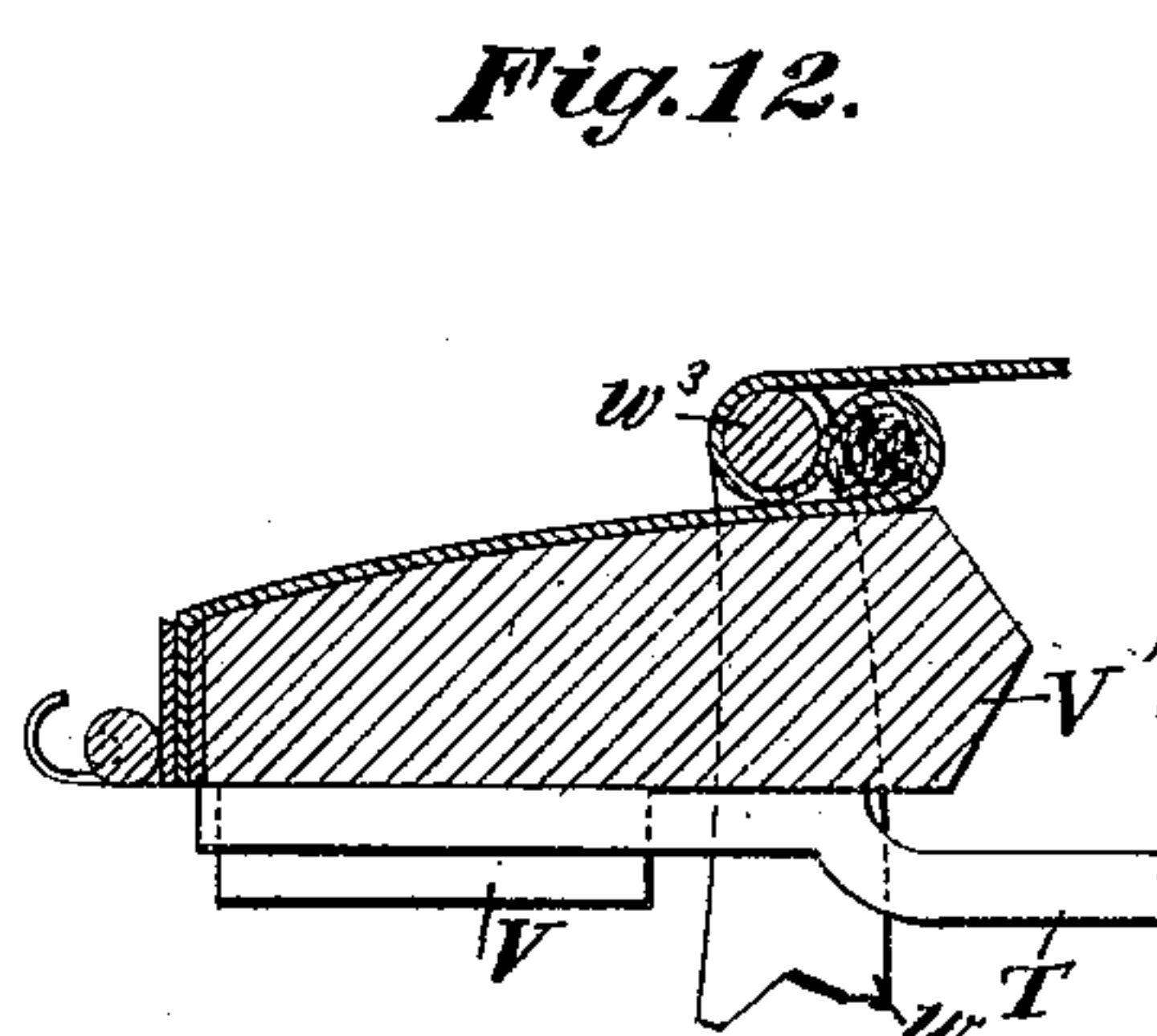
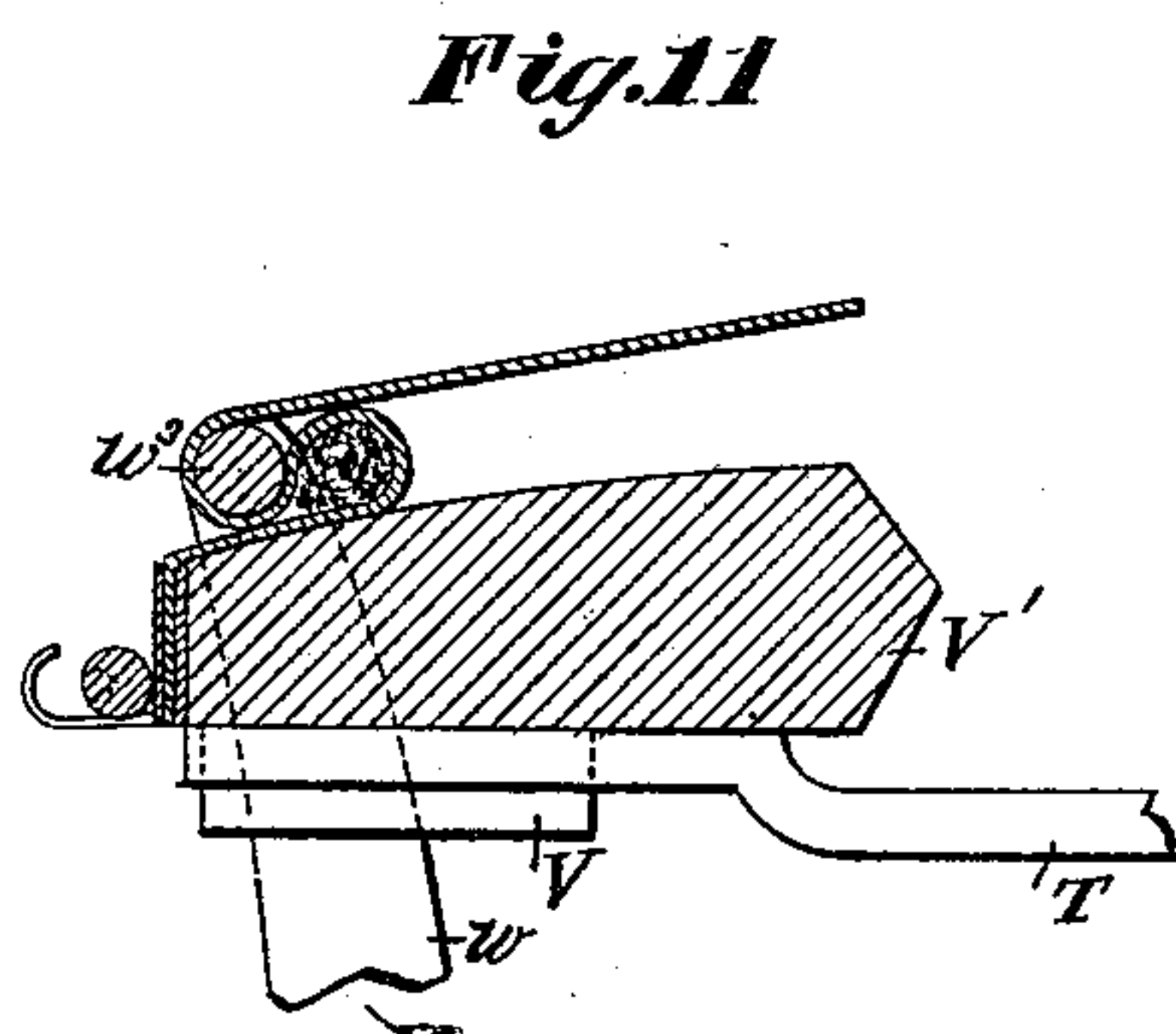
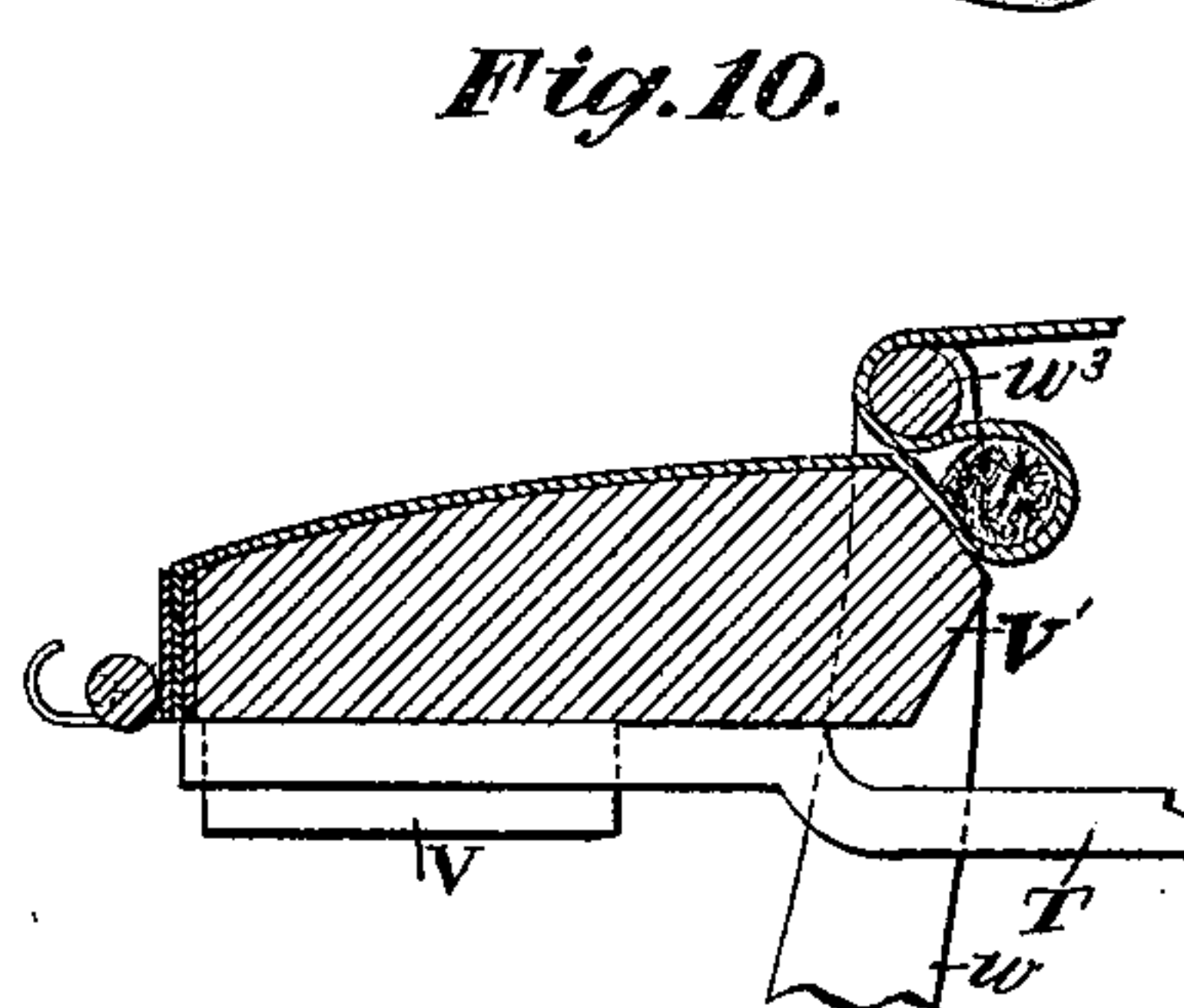
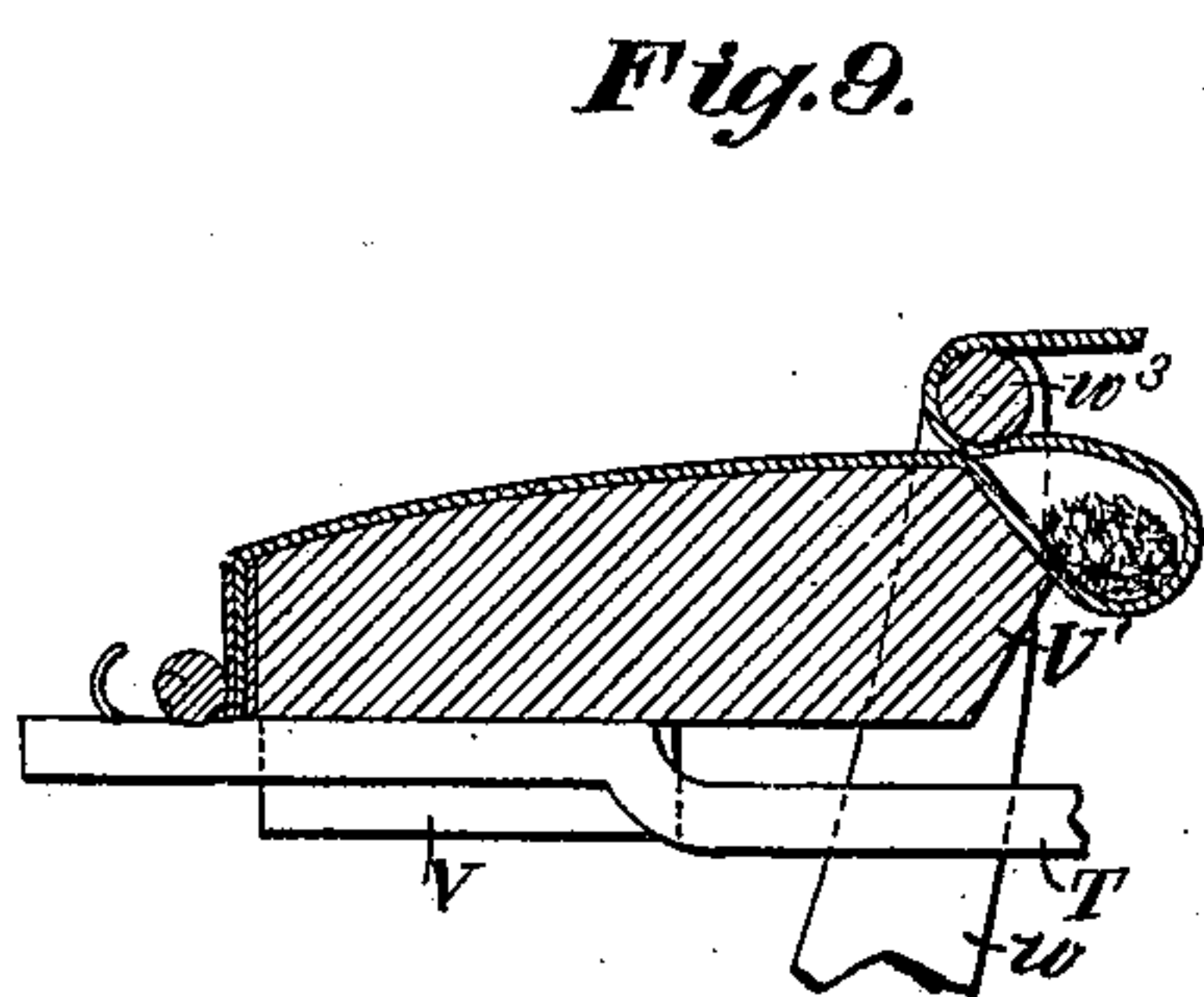
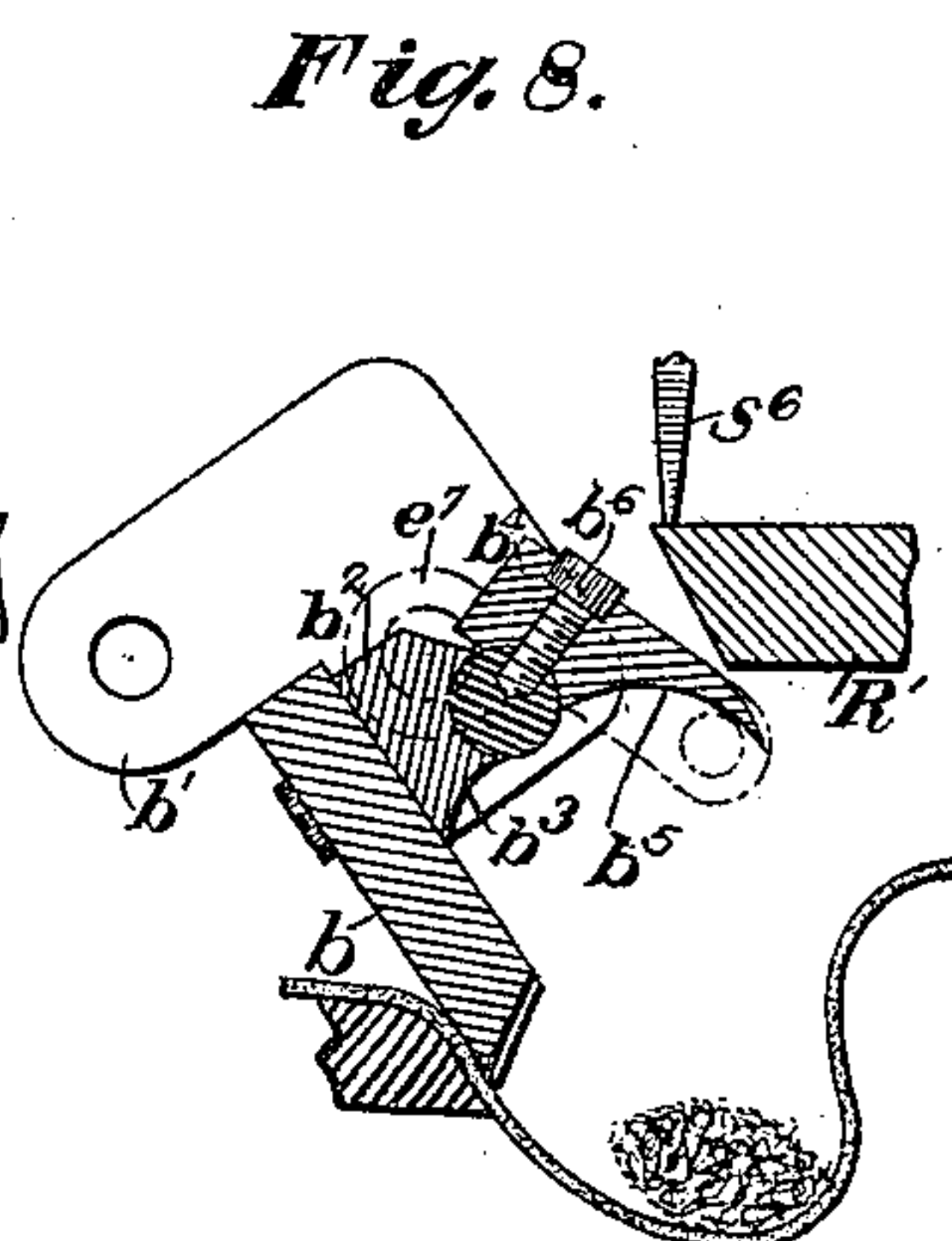
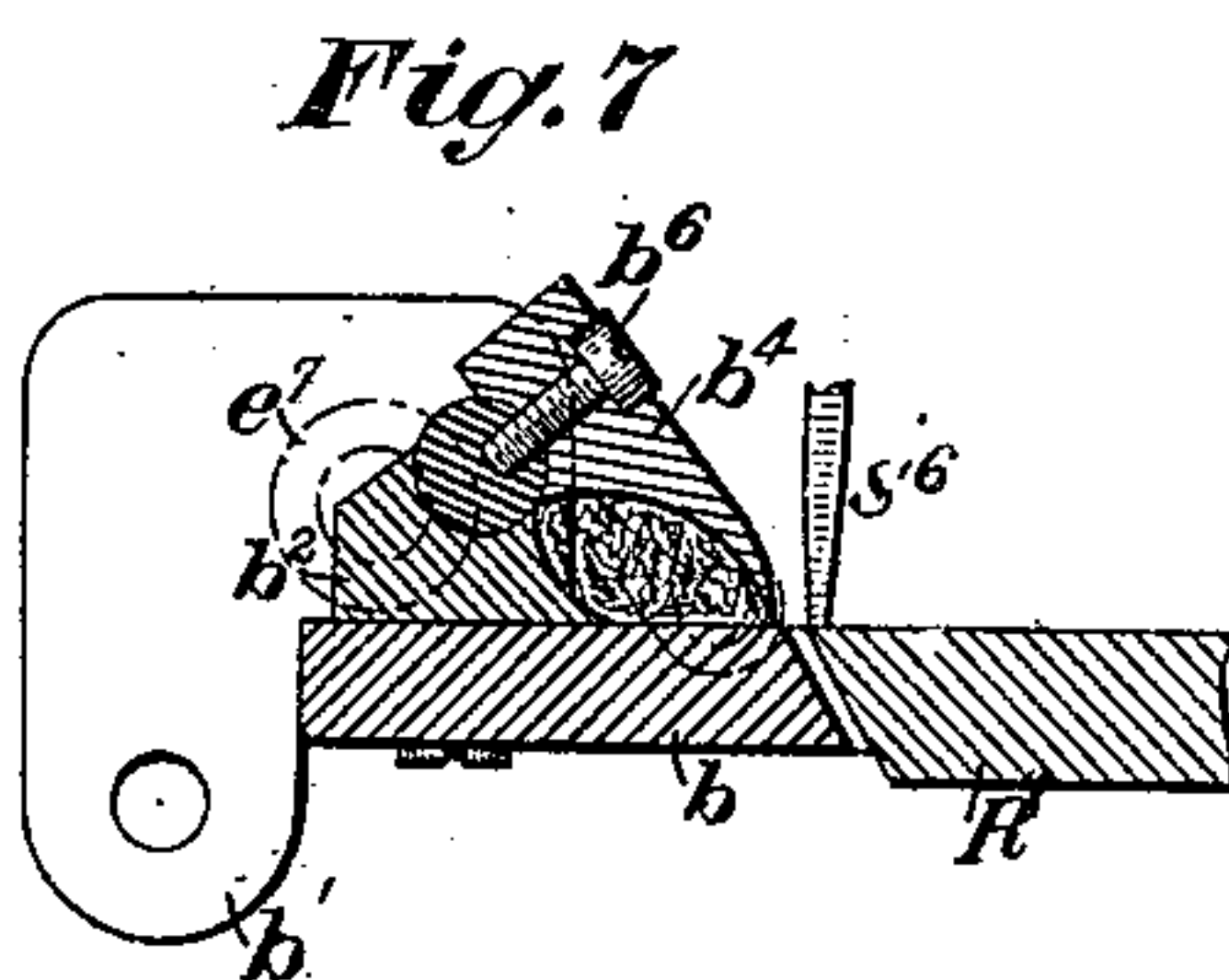
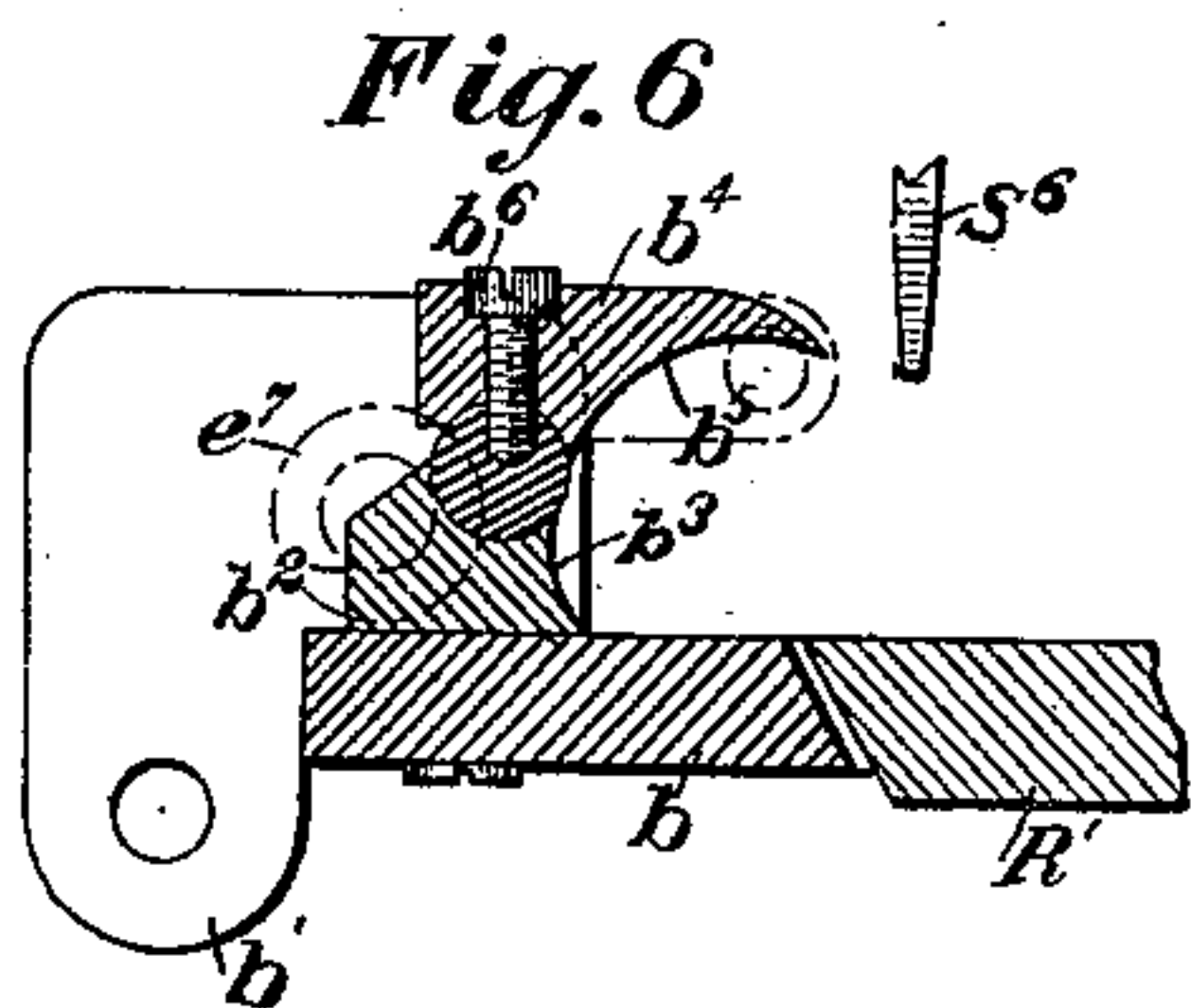
Patented Aug. 8, 1899.

E. PISKO.
CIGAR BUNCH MAKING MACHINE.

(Application filed Mar. 16, 1898.)

(No Model.)

4 Sheets—Sheet 4.



Witnesses:
Geo. B. Rowley.
Harold Lewis.

T **Inventor:**
Emanuel Picko
By *Raymond & Harmon*
Attorneys.

UNITED STATES PATENT OFFICE.

EMANUEL PISKO, OF NEW YORK, N. Y.

CIGAR-BUNCH-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 630,520, dated August 8, 1899.

Application filed March 16, 1898. Serial No. 674,027. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL PISKO, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Cigar-Bunch-Making Machine, of which the following is a specification.

My invention relates to machines for making cigar-bunches, and has for its object to provide a machine which will closely imitate the operation of making bunches as performed by hand.

In the accompanying drawings, Figure 1 is a side elevation of the machine, parts of the frame being broken away. Fig. 2 is a front elevation of the machine, parts of the frame being broken away. Fig. 3 is a plan view of the upper part of the machine, showing the relative arrangement of the operating-cams. Fig. 4 is a section taken on the line X X, Fig. 2, looking to the left. Fig. 5 is a section on the same line, looking to the right. Figs. 6, 7, and 8 are sectional views showing the shape of the jaws and their relative positions in the various movements. Figs. 9, 10, 11, 12, and 13 are sectional views showing the relative positions of the rolling-table and roller at the various periods of the operation.

At the rear of the frame of the machine is a shaft A, carrying a pulley A', which is operated from any source of power. This shaft is provided with a clutch B for throwing the machine in and out of operation. This shaft also carries a gear-wheel C, which meshes with another gear-wheel D on the shaft E, which shaft also carries a sprocket-wheel F at one extremity and intermediate of its extremities the cams G and H, one for operating the rolling-table and the other for operating the roller, as will be more fully described. Attached to the frame is a horizontal table I, which is depressed in its center to receive the upper part of an endless traveling belt J of the feeding device, the upper surface of the belt being flush with the edges of the table. The table carries adjustable gages B' for regulating the length of the filler. At the rear of this table is a shaft K, extending from side to side thereof, said shaft being movable in slots L and adjusted by means of the set-screws l, thus affording provision for tightening the belt. A roller M is attached to this shaft,

around which the belt passes, said roller being provided with projections m, which engage with eyelets in the edges of the belt. Attached to the frame is a horizontal table N, from which rises uprights O. Through these uprights runs the shaft O', which carries at one end a gear-wheel P. The shaft also carries a roller around which the endless feeding-belt passes, this roller being also provided with projections the same as that at the rear. The upper feeding-belt P' is carried by a frame P². This frame is pivoted to the shaft P³, which is situated above the other shaft and carried by the same uprights. This shaft also carries a roller provided with teeth or projections, which engage the eyelets in the edges of the upper feeding-belt. The rear of this frame carries an adjustable roller or shaft P⁴, similar in construction to the rear roller, around which the lower belt passes, thus enabling the upper belt to be tightened to the desired degree. The distance of this pivoted frame from the table, and thus the distance between the two endless belts, is regulated by means of set-screws P⁵. The end of the shaft on which this frame is pivoted carries a gear-wheel P⁶, meshing with the gear-wheel of the lower shaft, and also carries a ratchet-wheel P⁷. Loosely pivoted on this shaft is a sleeve Q³, which carries an arm P⁸, having a ratchet P⁹, engaging the ratchet-wheel. On a shaft Q, running from side to side on the upper part of the frame, is mounted loosely a bell-crank arm Q', the end of which is connected by a link Q² with the sleeve Q³. The other arm carries a roller Q⁴, against which bears a cam Q⁵, carried by the shaft R. Attached to the ratchet-sleeve is a chain or cord Q⁶, the other end of which is attached to a spring Q⁷, fastened to the table of the machine. The upper arm of the bell-crank carries a set-screw Q⁸, which bears against the arm Q⁹ on the frame, thus limiting the forward motion of the ratchet, and consequently the extent of its throw. The operation of this feeding device is as follows: With the ratchet in its extreme forward position the cam Q⁵ bears against the roller Q⁴ in the upper arm of the bell-crank, and through the other arm of the bell-crank and the link Q², connected with the ratchet-sleeve, turns the gear-wheel P⁶, which turns the shaft, causing movement of

the upper belt, and this gear-wheel, transmitting the motion to the gear-wheel P on the shaft O', causes the motion of the lower belt, the tobacco being carried along between the
 5 belts. The amount of tobacco fed depends upon the throw of the ratchet. When the cam has passed the roller on the upper bell-crank arm, the force of the spring Q⁷ pulls the ratchet-sleeve P⁸ down, throwing the ratchet
 10 forward in position to again feed at the proper time. The actuating parts for the feeding device are the same as those shown in my Patent No. 503,293 and need not be more particularly described. Immediately in front of the
 15 rollers carrying the belts is a ledge or table R', which extends between the uprights O and on the level of the upper surface of the lower belt. The belts deliver the tobacco onto and across this ledge. The table of the machine
 20 carries the uprights S, which carry a shaft S', on which is pivoted a rocking arm S², which carries at its extremities rollers S³. On its upper arm it has two projections S⁴, to the outer ends of which are loosely attached links
 25 S⁵, these links at their lower ends being attached to a plate S⁶ and which slides in ways or grooves S⁷ in the uprights S. The shaft R, extending across from side to side of the upper part of the frame, carries a cam S⁹,
 30 which bears against the rollers at the ends of the rocking arm S² and moves the arm positively in both directions, thus causing a falling and rising of the sliding plate. It will be noted that this cam bears always on one roller
 35 or the other, so that the motion of the plate is not permitted except with the motion of the cam. This causes a smooth easy motion of the plate, entirely free from sudden shocks or jars. The cam-shaft R is operated from the
 40 shaft E by means of the sprocket-chain E' or other suitable means of transmitting power.

The device for seizing and tearing off and delivering the tobacco consists of a lower jaw b, having rearward extensions b', by which it
 45 is pivoted to the uprights S. At the rear edge of the lower jaw a ledge b² extends completely the length of the jaw, this ledge having a curved recess b³ in its forward face and having also one on its upper edge. On the up-
 50 per edge of this ledge is pivoted the upper jaw b⁴ by a knuckle-joint, as is clearly shown in Figs. 6, 7, and 8. This upper jaw is provided on its inner face with a curved recess b⁵, as shown, and the width of this upper jaw
 55 is less than the distance from its pivotal point to the forward edge of the lower jaw, so that when the upper jaw comes down to seize and tear off the tobacco it will also crowd the tobacco back into the recess between the jaws.
 60 The upper jaw is attached by means of screws b⁶ to the pivot-pin of the knuckle-joint, thus rendering it easily removable, the object being to provide means for cleaning the jaws should they become clogged without the ne-
 65 cessity of dismantling the machine. The lower jaw has attached to one of its ends the jointed slide-rod c, which moves in a way c'

in the upright S, the joint being near the lower end of the said rod. This sliding rod carries a pin c², projecting through a slot c³ 70 in the upright and through a slot c⁷ in a rocking arm c⁴, fastened to the shaft Q. This arm carries a roller c⁵, forming a bearing for the cam c⁶ on the shaft R. At the opposite end of the jaws and attached to the upper 75 jaw is another jointed sliding rod e, moving in a way e' in the opposite upright. This rod also carries a pin e², which passes through a slot e³ in said upright and through a slot in the end of the rocking arm e⁴. This rocking 80 arm is loose on the shaft Q and carries a roller e⁵, forming a bearing for the cam e⁶. On the same end of the lower jaw is a lug or projection e⁷. On the upper end of the sliding rod e is a cam projection e⁸, so placed that it will 85 be engaged by the cam e⁹ on the shaft R. The closing of the jaws and their motion downward to the rolling-table is caused by the sliding rod e and the cam e⁹. The upward motion of the jaws by which the lower jaw is 90 brought into proper position is performed by the sliding rod c and cam c⁶. The further upward motion of the upper jaw in order to open the jaws and permit the feeding of tobacco between them is performed by means 95 of the cam e⁶ and the rocking arm e⁴. The operation of these jaws is as follows: The parts being in position shown in Figs. 4, 5, and 6, the motion of the power-shaft causes, through the connections shown, the rotation 100 of the shaft R. The cam e⁹ engages with the cam-piece e⁸ on the sliding rod e and closes the jaws, the continued motion of the shaft in further descent of the sliding rod causing both jaws to move downwardly together, remaining 105 closed until the lower portion of the jointed slide-rod bears against the lug e⁷ on the end of the lower jaw. This, as will be seen, causes the the jaws to open, the lower jaw moving down into contact with the rolling-table. During 110 this motion the opposite slide-rod moves downward, being permitted to do so by the shape of the cam c⁶. At this point in the operation the cam c⁶ comes into action against the roller on the rocking arm c⁴, and the further rota- 115 tion of the shaft causes said cam, through its connections described, to operate the slide-rod c, which lifts the jaws into a position where the lower jaw is level with the belt or table; but, as will be seen, the construction of the 120 jaws is such that the upper jaw is closed upon the lower one. This upper jaw is raised to its proper position by means of the cam e⁶ bearing upon the roller e⁵ on the rocking arm e⁴. This arm being loose on the shaft and 125 being connected with the slide-rod by means of the pin-and-slot connection shown and described will cause the upper jaw to be raised to its proper position. The cams are so constructed that they cease then to act for mov- 130 ing the parts, but keep them in position until another downward motion. Thus it will be seen that all the motions in both directions are caused positively and in such a manner

that the parts will operate easily and smoothly without shock or jar.

Attached to the under side of the table of the machine are metal slides T, on which
5 moves a metallic plate V, to the upper surface of which the rolling-table V' is attached. This plate has a bifurcated lug v' , to which is pivotally attached one end of the link or
10 rod v^2 , the other end of which is pivotally attached to the upper end of a rocking arm v^3 , which is loosely mounted on the shaft v^4 , that runs from side to side of the machine. To the other end of this rocking arm is loosely
15 pivoted a link v^5 , which carries a stud v^6 , which moves in the cam-groove v^7 of the cam G on the shaft E. The upper end of this link is slotted, and through this slot passes loosely the said shaft E. This is to keep the link in position and to allow it the necessary play.
20 To the forward edge of the rolling-table is removably attached one end of the rolling-apron, the other end being attached to the frame in the ordinary manner. Loosely mounted on the shaft v^4 are two rocking arms
25 w , connected rigidly together near their tops by a tie-bolt w' and at their lower ends by a tie-bolt w^2 . The upper ends of these rocking arms carry the roller proper, w^3 . Loosely pivoted on the tie-bolt w^2 is a link w^4 , carrying
30 a stud w^5 at its upper end, which stud works in the cam-groove w^6 of the cam H on the shaft E. This link is steadied and kept in position in the same manner as described for the other link. The cam-groove in the cam
35 is so shaped as to cause a reroll of the bunch, and it will be noted that the motion of the bunching-roller is positive in both directions, thus obviating a great defect in the construction shown in my Patent No. 550,802, and
40 doing away with any sudden motion, shock, or jar.

The operation of the whole machine is as follows: The ratchet being in position to cause the feed of the tobacco upon the rota-
45 tion of the power-shaft, the belts are moved by the mechanism described and the tobacco is fed along between the belts over the table or ledge and into the space between the jaws, the amount fed depending upon the throw of the ratchet. On further motion of the shaft
50 the cam S^9 bears against the roller on the lower end of the rocking arm S^2 and causes the slide or plate S^6 , which is preferably serrated at its lower edge, to descend upon the tobacco and hold it firmly upon the ledge of
55 the table. This slide or plate does not cut, nor is it intended to have any cutting action. The further rotation of the shaft causes the cam e^9 to bear on projection e^8 of the slide-rod e , and thus causes the upper jaw to close
60 upon the lower and then both jaws to descend together. This motion tears off the tobacco in very close imitation of the way it would be torn by the fingers of a hand bunch-maker,
65 and by the peculiar construction of these jaws the tobacco is crowded back into the curved space between the jaws and given a

preliminary or rough shaping. The jaws descend together, the upper jaw being raised
by means of the lower end of the slide-rod 70 striking against the lug e^7 on the end of the lower jaw. The lower jaw descends until it comes in contact with the edge of the rolling-table immediately above the pocket or bight in the apron. In fact, this lower jaw strikes 75 the edge of the table but so slight a blow that while sufficient to secure dislodging of the filler it is not sufficient to be felt or to cause any perceptible jar in the machine. On the further motion of the shaft the jaws 80 rise to the proper position to receive the next charge, as before described, and in the meantime, by means of the cam G, the rocking arm v^3 , and the described connections, the table is carried back, closing the pocket in the apron, 85 as shown in Fig. 9. The cam H then comes into play by means of the connections shown and described and moves the bunching-roller forward, the table being carried forward at the same time to its normal position, as shown 90 in Fig. 10. As the bunching-roller and the table move forward together the pocket remains closed, and at the same time the filler is rolled by the action of the bunching-roller traveling under the belt. Thus the filler is 95 given its shape, and from the table being up against the bunching-roller there is no possibility of the filler being thrown from the pocket, as often happens where the bunching-roller alone is depended upon to form the 100 pocket or bight. The bunching-roller continues to advance along the surface of the table, rolling the binder, which has been placed on the rolling-table, around the tobacco until the bunching-roller reaches the 105 front edge of the table, as in the positions shown in Fig. 11. The shape of the cam-groove then causes the bunching-roller to travel backward to the rear edge of the table to the position shown in Fig. 12, and then 110 forward, thus giving a reroll to the bunch, and on this second forward movement the bunching-roller is carried to its extreme forward limit and drops the rolled bunch into the holder at the front edge of the table, the 115 position being shown in Fig. 13. It is obvious that by changing the shape of the cam-groove as many rolling motions can be given as desired. The bunching-roller then passes back to its normal position at the rear of the table. 120 Meanwhile tobacco has again been fed into the jaws and the operation repeated.

It will be noted that all the motions of each part of the machine are absolutely controlled and positively made, so that there is no pos- 125 sibility of a sudden descent or motion or a sudden throwing into action of any part, but every motion is started gradually and the position of each of the movable parts of the machine is at all times controlled by its actu- 130 ating device. This is of the highest importance, as it not only avoids jars and shocks and breakage of the machine, but it insures the perfection of the work performed and re-

duces the power necessary to operate the machine to a minimum. As a matter of fact the machine can be operated easily by turning the belt-pulley with the hand. It is of especial importance that the motions of the bunching-roller and the table should be smooth, even, and positive. Otherwise abrupt motions or shocks or jars would either throw the bunch out or cause it to become crushed between the bunching-roller and the table. This was a great defect of the rolling-table shown and claimed in my Patent No. 550,802. The preliminary backward motion of the rolling-table in order to close the pocket is of great importance, as it keeps the bight in the apron positively closed as the table and bunching-roller move forward, so that when the table reaches its forward limit the filler is properly shaped and ready to be rolled into the binder.

The tobacco is not forced into the jaws, but in a manner laid therein in the same way as a hand-operator would lay it in his hand. The shape of the space between the jaws during the feeding is practically that of the hand of a hand bunch-maker, as will be seen by inspection of Fig. 6. When the tobacco is torn off, it is moved or crowded back into the recess between the jaws, owing to the construction before described. The shape of the recess is such (see Fig. 7) that a preliminary or rough shaping is given the filler, just as in working bunches by hand. A further and most important function of these jaws is that wet filler will not be delivered to the rolling-table. The crowding back of the tobacco against the curved face of the ledge of the lower jaw will cause it, if too wet, to adhere thereto, and consequently at the next feeding motion of the belts will stop the machine; but the feed is so smooth, even, and gradual that this is not done suddenly or with any shock or jar; but the pressure gradually increasing will throw the power-belt off the pulley. Thus the presence of wet filler is automatically detected and its delivery to the rolling-table automatically prevented. The importance of this feature cannot be overestimated. One great trouble with cigar-bunch-making machines has been the danger of rolling the filler too wet, and consequently the cigars would not smoke properly and were unsalable. The whole operation of these jaws is a close imitation of the hand method of bunch-making, and the resulting cigars are equal in every way to the hand-made and, as a matter of fact, cannot be distinguished from them in any way. The positive operation of these jaws in all positions is of great importance, as it insures the absolute performance of the intended operations, which is not accomplished when springs or equivalent devices are used to cause some of the motions, as is the case in my former patent, No. 503,293. Also in case the load or amount of work is increased, either by too much tobacco being fed or by the presence of some

foreign substance in the tobacco, the strain is brought so gradually on the parts that there is no danger of breaking or disorganizing the apparatus.

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

1. In a cigar-bunch-making machine the combination with a feeding device and a rolling-table of a mechanism for seizing and tearing off sufficient tobacco for a bunch and delivering it to the table, and means for preventing the delivery of wet filler therefrom, substantially as described.

2. In a cigar-bunch-making machine the combination with a feeding device and a rolling-table of pivoted jaws for seizing and tearing off sufficient tobacco for a bunch and delivering it to the table and means for preventing the delivery of wet filler therefrom, substantially as described.

3. In a cigar-bunch-making machine the combination with a feeding device and a rolling-table of pivoted jaws for seizing and tearing off sufficient tobacco for a bunch and delivering it to the table and mechanism connected with said jaws for positively actuating them and means to prevent the delivery of a wet filler therefrom, substantially as described.

4. In a cigar-bunch-making machine the combination of a movable table and a roller and means for giving the table a preliminary motion backward to close the pocket, means for moving the table and roller forward together and means for giving the roller one or more reciprocations whereby a reroll of the bunch is produced, substantially as described.

5. In a cigar-bunch-making machine means for seizing and tearing off and delivering tobacco to the rolling-table consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw at a distance above its face, the upper jaw being shorter than the distance from the pivotal point to the edge of the lower jaw, and means for operating said jaws whereby the closing of the jaws will crowd the tobacco back into the space between said jaws, thus giving a rough shape to the bunch, substantially as described.

6. In a cigar-bunch-making machine means for seizing and tearing off and delivering tobacco to the rolling-table consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw at a distance above its face, said jaw having a curved recess on its inner face, the upper jaw being shorter than the distance from the pivotal point to the edge of the lower jaw and means for operating said jaws whereby the closing of the jaws will crowd the tobacco back into the space between said jaws, thus giving a rough shape to the bunch, substantially as described.

7. In a cigar-bunch-making machine means for seizing and tearing off and delivering tobacco to the rolling-table consisting of a lower

jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw at a distance above its face, the upper jaw being shorter than the distance from the pivotal point to the edge of the lower jaw whereby the closing of said jaws will crowd the tobacco back into the space between same, said lower jaw having a ledge extending across its face, and means for operating said jaws, substantially as described.

8. In a cigar-bunch-making machine means for seizing and tearing off and delivering tobacco to the rolling-table consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw at a distance above its face, said jaw having a curved recess on its inner face, the upper jaw being shorter than the distance from the pivotal point to the edge of the lower jaw, whereby the closing of said jaws will crowd the tobacco back into the space between same, said lower jaw having a ledge across its upper face and means for operating said jaws, substantially as described.

9. In a cigar-bunch-making machine means for seizing and tearing off and delivering tobacco to the rolling-table consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw at a distance above its face, said jaw having a curved recess on its inner face, the upper jaw being shorter than the distance from the pivotal point to the edge of the lower jaw, said lower jaw having a ledge across its upper face, said ledge having a curved recess on its front face, and means for operating said jaws, substantially as described.

10. In a cigar-bunch-making machine the combination of the lower jaw having provision at its rear edge for pivotal connection with the frame of the machine, an upper jaw pivoted to the lower jaw intermediate of its edges and at a distance above its face, said upper jaw having a curved recess on its inner face, and a ledge extending across the lower jaw intermediate of its edges, substantially as described.

11. In a cigar-bunch-making machine the combination of the lower jaw having provision at its rear edge for pivotal connection with the frame, a ledge across the upper face of said jaw, an upper jaw pivoted on said ledge by a knuckle-joint, the forward edge of the ledge and the inner face of the upper jaw being provided with curved recesses, substantially as described.

12. In a cigar-bunch-making machine the combination with a feeding device and a rolling-table of pivoted jaws for seizing and tearing off and delivering tobacco to the rolling-table, jointed slide-rods moving on each side of the machine and attached one to the upper jaw and the other to the lower jaw and means for positively operating one slide in a downward direction and the other slide in an upward direction, substantially as described.

13. In a cigar-bunch-making machine the

combination with a feeding device and a rolling-table of pivoted jaws for seizing and tearing off and delivering tobacco to the rolling-table, jointed slide-rods moving on each side of the machine and attached one to the upper jaw and the other to the lower jaw and means for positively operating one slide in a downward direction and the other slide in an upward direction, and means for automatically opening the jaws when in position to deliver the filler, substantially as described.

14. In a cigar-bunch-making machine the combination with a feeding device and a rolling-table of pivoted jaws for seizing and tearing off and delivering tobacco to the rolling-table, jointed slide-rods moving on each side of the machine and attached one to the upper jaw and the other to the lower jaw and means for positively operating one slide in a downward direction and the other slide in an upward direction, and a projection on the end of the lower jaw against which one of the jointed slide-rods bears in the downward motion of the jaws, whereby said jaws are automatically opened, substantially as described.

15. In a cigar-bunch-making machine the combination of the pivoted jaws for seizing and tearing off and delivering tobacco to the rolling-table, a sliding rod pivoted to the lower jaw, a shaft, a rocking arm fixed to the shaft and connected with said sliding rod, a sliding rod connected with the upper jaw, a second shaft, a cam on the said shaft for actuating said rod, a rocking arm loose on said first-mentioned shaft and connected with said sliding rod, and means for actuating said rocking arm, substantially as described.

16. In a cigar-bunch-making machine means for seizing and tearing off and delivering tobacco to the rolling-table consisting of a lower jaw pivoted to the frame of the machine, a removable upper jaw pivoted to the lower jaw at a distance above its face, the upper jaw being shorter than the distance from the pivotal point to the edge of the lower jaw whereby the closing of said jaws will crowd the tobacco back into the space between same, and means for operating said jaws, substantially as described.

17. In a cigar-bunch-making machine means for seizing and tearing off and delivering tobacco to the rolling-table consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw at a distance above its face, the upper jaw being shorter than the distance from the pivotal point to the edge of the lower jaw whereby the closing of said jaws will crowd the tobacco back into the space between same, and means for positively operating said jaws and controlling their motion in all positions, substantially as described.

18. In a cigar-bunch-making machine the combination with a feeding device and a rolling-table of seizing and tearing jaws pivoted together, the upper jaw having a curved recessed inner face, substantially as described.

19. In a cigar-bunch-making machine the combination with a feeding device and a rolling-table of seizing and tearing jaws pivoted together, the upper jaw having a curved recessed inner face, the lower jaw having a ledge at the rear with a curved recess on its forward face, substantially as described.

20. In a cigar-bunch-making machine the combination of a rocking arm and sliding plate, connections between said rocking arm and plate, means acting on the ends of said rocking arm to move it positively in both directions and control its motion in all positions, substantially as described.

21. In a cigar-bunch-making machine the combination of a rocking arm and sliding plate, links connecting the arm and plate, a cam between the ends of said rocking arm for positively actuating the same the motion being controlled by the cam in all positions of the plate, substantially as described.

22. In a cigar-bunch-making machine the combination of the rocking arm, the reciprocating plate, links connecting said rocking arm and plate, rollers on the ends of said rocking arm and the actuating-cam adapted to bear against said rollers and actuate the plate positively in both directions, substantially as described.

23. In a cigar-bunch-making machine means for gripping and tearing off the tobacco consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw above its face, means for closing the jaws and moving them together downwardly to deliver the tobacco to the rolling-table and means for crowding the tobacco back into the space between the jaws after the tobacco is torn off whereby the filler is given a rough approximation to its finished shape, substantially as described.

24. In a cigar-bunch-making machine means for gripping and tearing off the tobacco consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw above its face, the jaws when closed forming a curved recess or receptacle and means for operating the jaws, substantially as described.

25. In a cigar-bunch-making machine means for gripping and tearing off tobacco consisting of a lower jaw pivoted to the frame of the machine, an upper jaw pivoted to the lower jaw above its face, the upper jaw being shorter than the distance from the pivotal point to the front edge of the lower jaw, whereby the closing of said jaws will crowd the tobacco back into the space between same, the jaws when closed forming a curved recess or receptacle, substantially as described.

26. In a cigar-bunch-making machine the combination of a feeding device, a rolling-table, mechanism for seizing and tearing off sufficient tobacco for a bunch and delivering it to the table and means for automatically detecting the presence of wet filler, substantially as described.

27. In a cigar-bunch-making machine the combination of a feeding device, a rolling-table, mechanism for seizing and tearing off sufficient tobacco for a bunch and delivering it to the table and means for automatically detecting and preventing the feed of wet filler, substantially as described.

Signed at the city of New York, in the county of New York and State of New York, this 15th day of March, A. D. 1898.

EMANUEL PISKO.

Witnesses:

E. M. HARMON,
H. A. LEWIS.