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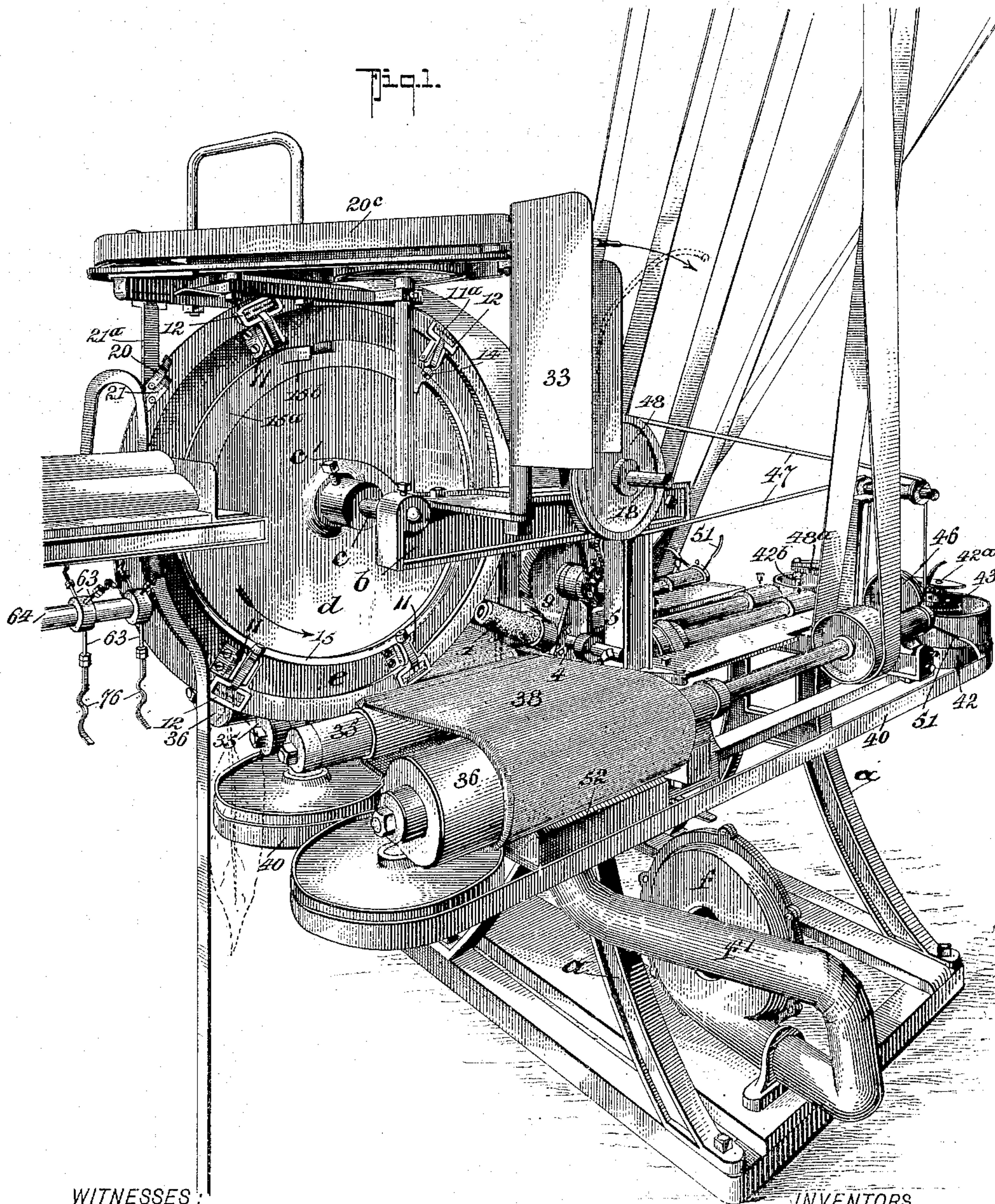
Patented Jan. 2, 1900.

A. R. ALLISON & C. E. BUEK.  
TOBACCO STEMMING MACHINE.

(Application filed Aug. 30, 1898.)

(No Model.)

6 Sheets—Sheet 1.



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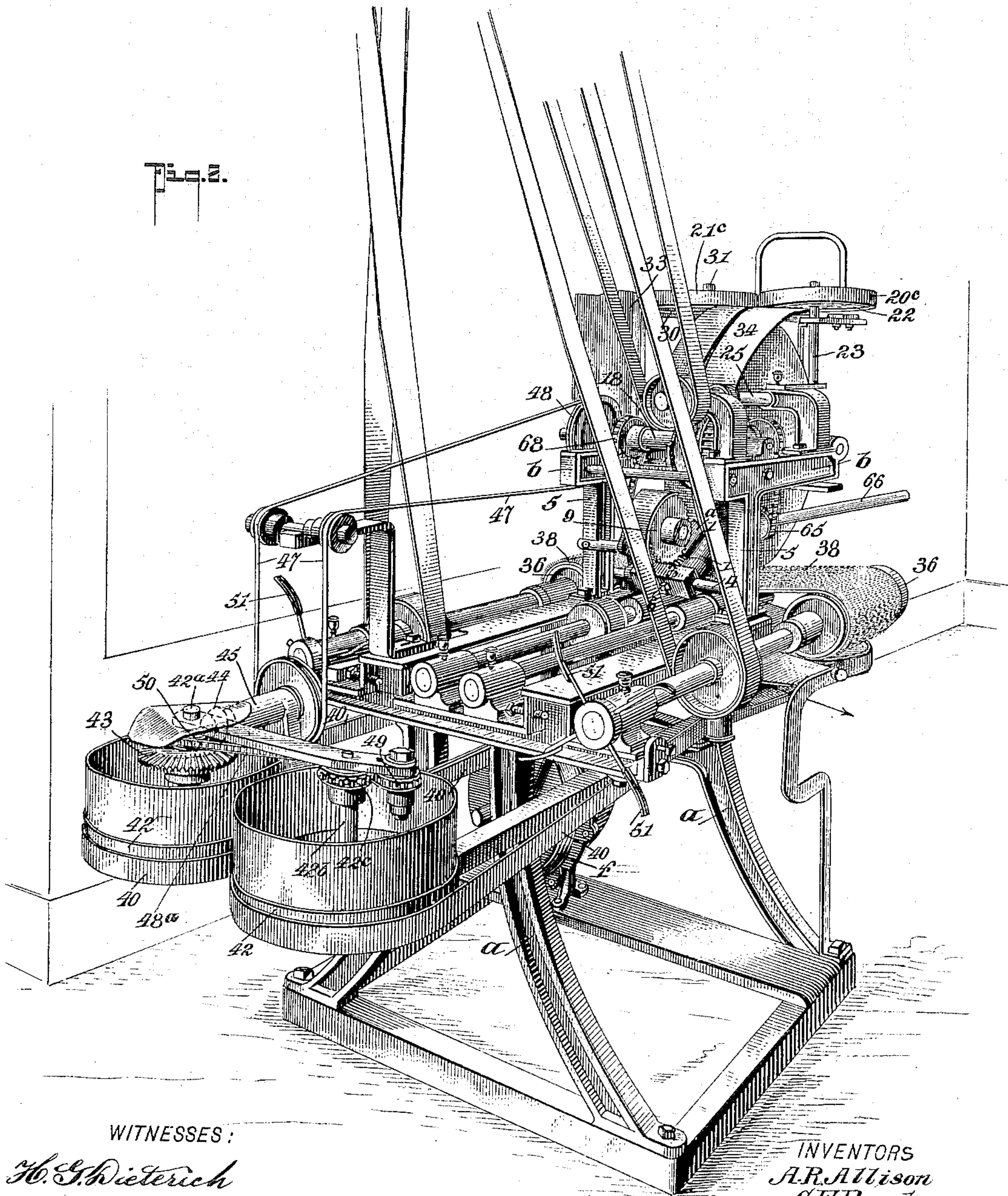
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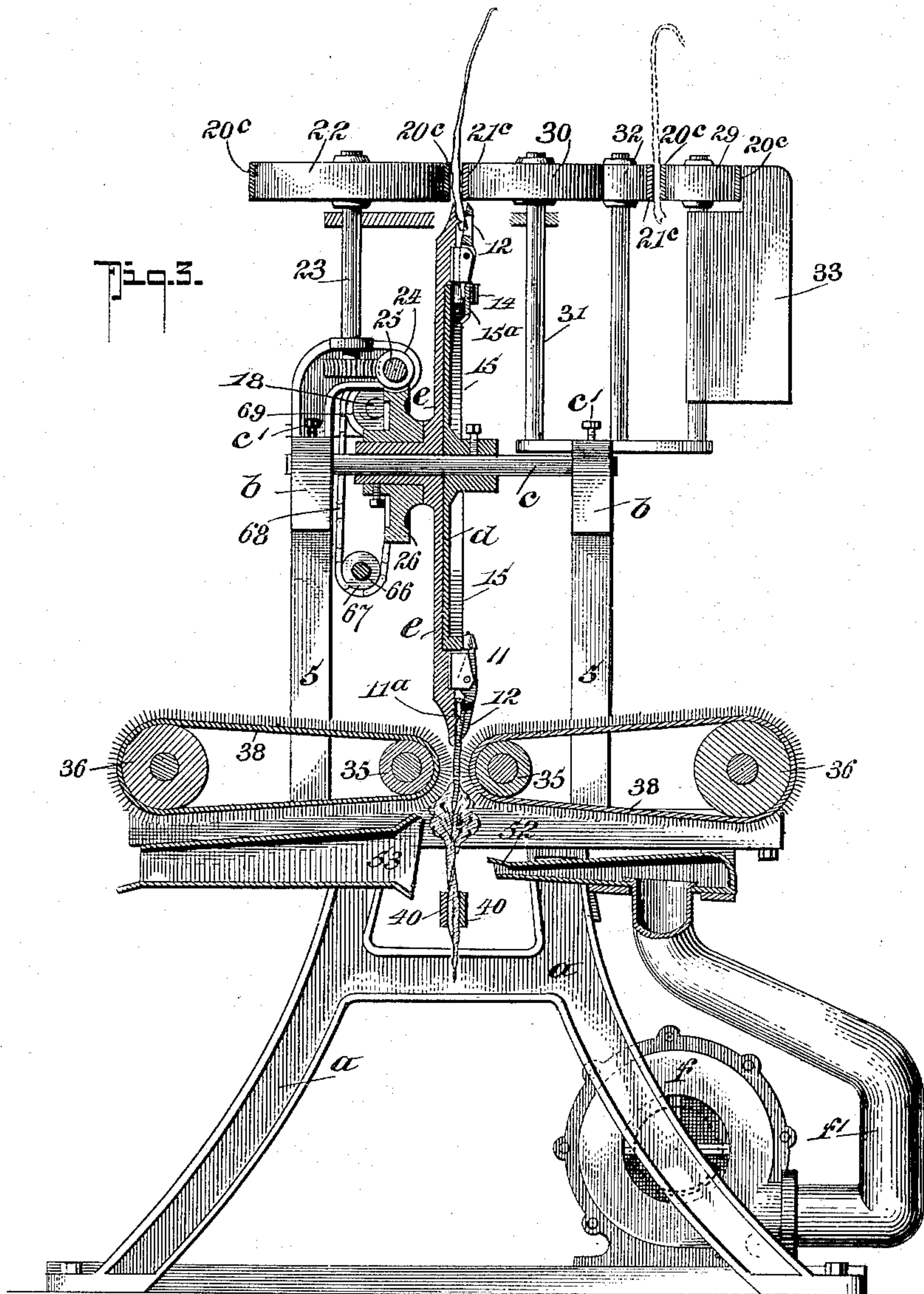
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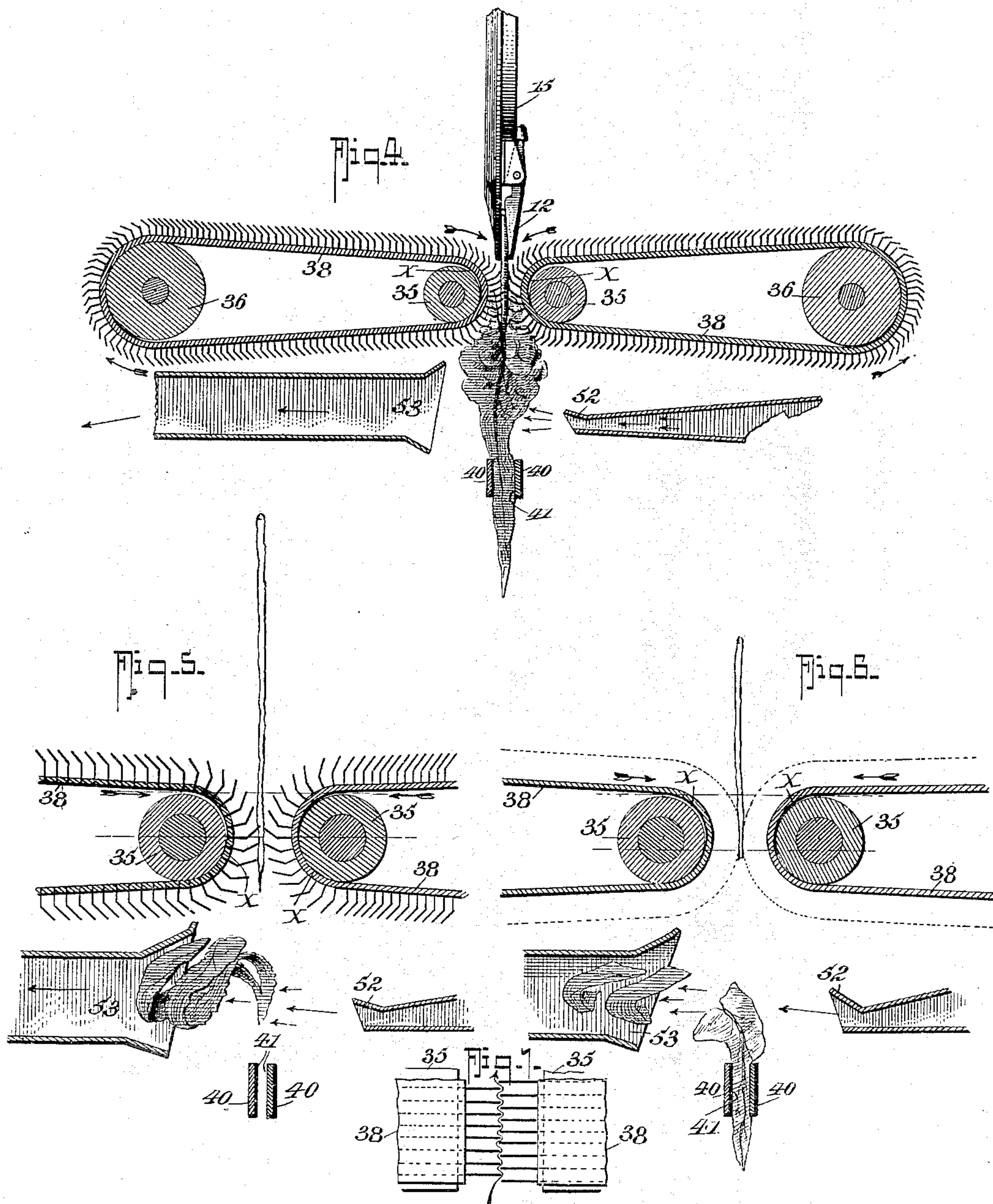
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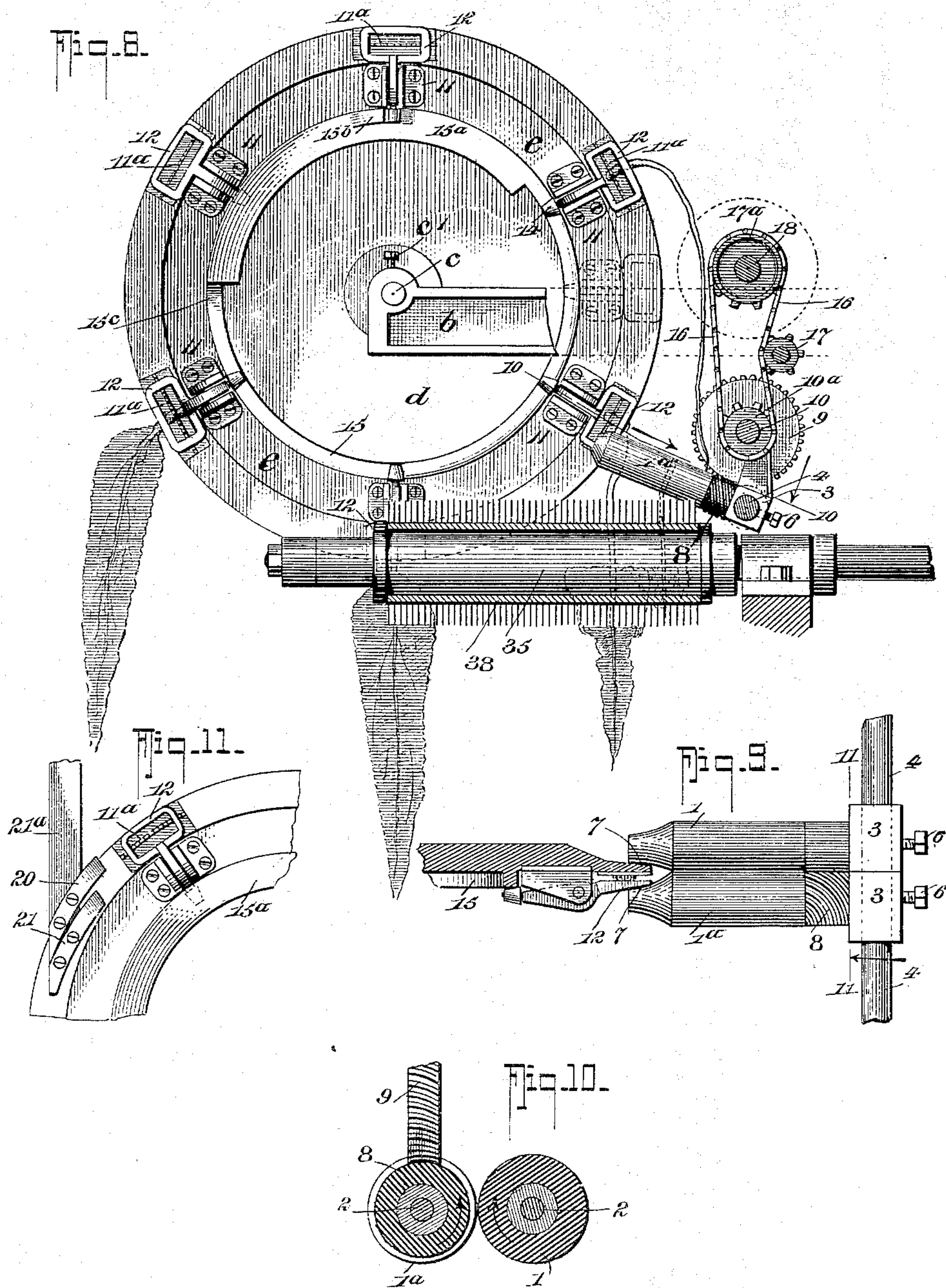
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6 Sheets—Sheet 5.



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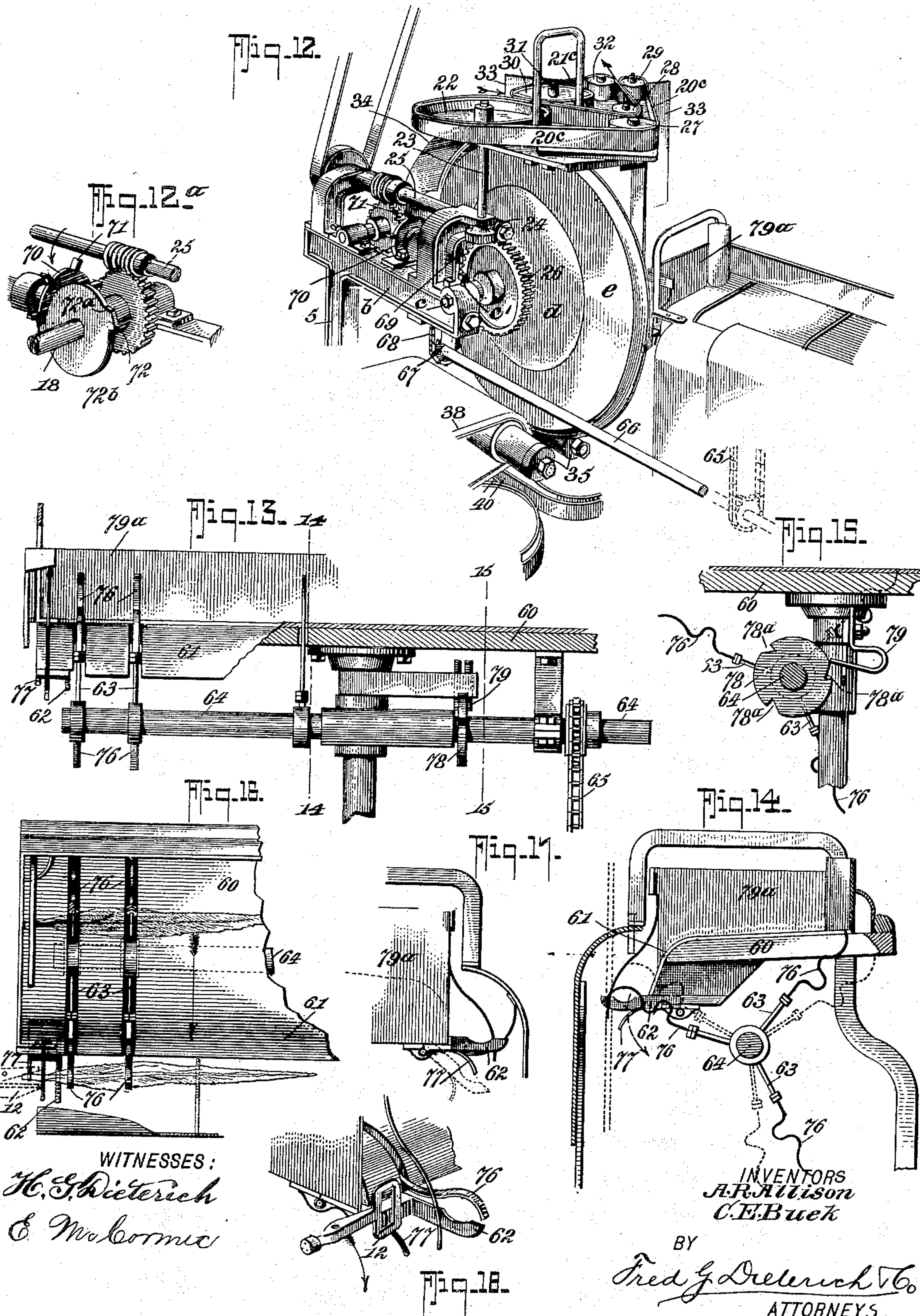
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(Application filed Aug. 30, 1898.)

(No Model.)

6 Sheets—Sheet 6.





# UNITED STATES PATENT OFFICE.

ALPHONSO ROSS ALLISON AND CHARLES E. BUEK, OF RICHMOND, VIRGINIA,  
ASSIGNORS TO THE UNIVERSAL STRIPPING MACHINE COMPANY, OF  
SAME PLACE.

## TOBACCO-STEMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,251, dated January 2, 1900.

Application filed August 30, 1898. Serial No. 689,856. (No model.)

*To all whom it may concern:*

Be it known that we, ALPHONSO ROSS ALLISON and CHARLES E. BUEK, of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Tobacco-Stemming Machines, of which the following is a specification.

This invention while relating generally to improvements in tobacco-leaf-stemming means more particularly refers to improvements on that type of machine disclosed in Patent No. 622,587, granted to A. R. Allison April 4, 1899; and it involves certain new features and combinations of parts with the structure disclosed in the aforesaid patent whereby to render the operation of the complete machine the more expeditious and effective.

In its more essential feature this invention comprehends what we term "supplemental stem-drawing mechanism" designed to draw the tip end of the stem through the wipers at a greater speed than can be effected by the main drawing devices, such as disclosed in the aforesaid patent, such operation serving the triple function of effecting a very rapid stripping action on the tip end of the leaf, holding the several stems as they are drawn up in quick succession by the main carrier or drawing-disk properly separated as they are being stripped, and particularly for relieving the stem at the butt-end of the pull strain exerted by the rotary carrier or disk.

This invention also comprehends, in connection with the rotary carrier and the wiping mechanism, a novel construction of stem-discharging means involving certain details and arrangement of parts operatively connected with the carrier, as hereinafter more fully explained.

This invention also consists in certain details of construction and combination of parts, which will be first described in detail and then pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the complete machine as seen from the front or feeder end, part of the automatic feeding devices being omitted. Fig. 2 is a perspective view of the machine viewed from the rear in a direction diametrically opposite from the direc-

tion of view of Fig. 1, the leaf-feeding devices being omitted. Fig. 3 is a transverse section of a portion of the machine, taken practically through the wiping mechanism, the leaf-carrier, and the blast devices hereinafter referred to, the stem-ejector devices being also partially shown. Fig. 4 is a detail longitudinal section of the stripping mechanism, illustrating the action of the wiping-belts on the butt-end of the leaf and stem. Fig. 5 is a similar view illustrating the manner in which the separated leaf particles are ejected from the machine. Fig. 6 illustrates how the broken leaf and stem portions are gathered and held from passing out with the perfectly-separated leaf particles. Fig. 7 is a diagram illustrating the arrangement of the card-teeth. Fig. 8 is a detail view illustrating the correlation of the supplemental drawing devices, the wiper or stripping belts, the rotary leaf-carrier, and the manner of their operation. Fig. 9 is a horizontal section taken practically on the line 10 of Fig. 8. Fig. 10 is a cross-section on the line 11 of Fig. 9. Fig. 11 is a detail view of the grip-jaw-cleaner devices hereinafter referred to. Figs. 12 and 12<sup>a</sup> are detail perspective views illustrating some of the mechanism for imparting an intermittent rotary motion to the feeder-operating shaft, they also showing the stem-ejector devices. Fig. 13 is a longitudinal section of the automatic feeder mechanism forming a part of our complete machine. Fig. 14 is a transverse section thereof on the line 14 14 of Fig. 13. Fig. 15 is a detail cross-section on the line 15 15 of Fig. 13. Fig. 16 is a detail plan view of the delivery end of such feed mechanism. Fig. 17 is a detail view of parts of such end. Fig. 18 is a detail view illustrating the manner in which the leaf-carrier grips trip the stem butt-rest member of the feeder devices.

This invention in its general construction embodies the wiping mechanism and the rotary carrier devices disclosed in the Allison patent before referred to, and the said parts operate in substantially the same manner.

In the accompanying drawings, *a* indicates a suitable supporting-frame having at the front end vertical standards 5 5, the upper ends of which merge with horizontal forwardly-extending bearing-arms *b b*, upon



which are supported the shaft 18, hereinafter again referred to, and the rotary carrier-shaft *c*. The rotary carrier comprises a disk *d*, fixedly held upon the shaft *c*, which shaft is  
 5 held from rotation by the clamp-nuts *c' c'*, (see Figs. 1 and 3,) and the said disk *d* supports the cam-annulus 15.

*e* indicates the rotating member of the carrier, to which the leaf-grips 11 are mounted.  
 10 In the present construction the stem-engaging portion of the grips is not hinged to the body of the member *e*, as in the Allison patent referred to, but forms an integral part of the swinging member 12.

15 The cam-annulus 15 in our machine has a segmental rim portion 15<sup>a</sup>, which extends from a point in advance of the stem-delivery end, and at the delivery end is formed with a detent-guide 15<sup>b</sup> in the path of the roller 14  
 20 on the pivotal grip member, which deflects the same and positively holds it under the rim 15<sup>a</sup> and at an open position until the grip reaches the point where the leaf-butt is fed to the carrier, at which point the grip is  
 25 again moved to its closed or gripping position by reason of the roller 14 engaging a rise 15<sup>c</sup> on the cam-annulus.

In the practical use of our machine it has been found that sometimes a portion of the  
 30 butt-end of the stem remains on the grip-spurs 11<sup>a</sup>, which in the present machine are made fast to the disk instead of to the pivotal grip-jaw, and to positively clean such spurs of any stem particles which may adhere there-  
 35 to we have provided a pair of cleaners in the nature of spring-plates 20 and 21, secured in a pendent hanger 21<sup>a</sup>, which are so arranged as to scrape over the face of the disk in close  
 40 proximity to the spurs 11<sup>a</sup> and above and below the same, and thereby positively dislodge any of the stem adhering to such spurs.

As in the Allison patent before referred to, the grip-jaws are in the nature of elongated members extended laterally at right angles  
 45 to the length of the pivoted portion. In this machine such form of jaws performs the double office of providing an ample clamping-surface as it passes the point of the leaf-stem butt-rest plate of the feeder devices, which  
 50 hereinafter will be specifically referred to.

In the Allison machine hereinbefore referred to the rotary carrier delivers the butt-end of the leaf and stem between the coacting wiping-surfaces and during the remain-  
 55 der of the wiping action draws the stem first slowly in the direction of the length of the stripper - rolls and then progressively the more rapidly through the wiping-surfaces at the same time it is being drawn sidewise, such  
 60 operation being effected by the pull on the stem in two directions. In the practical operation of the aforesaid construction of leaf-carrier and stem-drawing means the leaves and stems as they are drawn successively  
 65 and rapidly into engagement with the wiper-surfaces are kept sufficiently separated at the entrant end of the said surfaces, while at

the discharge end of the wiping-surfaces the stems and leaves frequently have such close relation that they become entangled and  
 70 broken. Furthermore, to effect a practical operation the grips on the carrier of necessity must be considerably spaced apart, which is objectionable in that the capacity of the machine is reduced below that which each  
 75 revolution of the carrier should produce. Another and important objection in the use of the aforesaid form of grip and carrier is that as the grips rise on their lift movement to the horizontal plane the extreme end of the  
 80 stem is subjected to a bend and so weakened that when the staple is quite dry it will break at this point. To overcome the several objections noted and greatly increase the capacity of the machine and reduce the danger of the  
 85 stem breaking off at the grip-point practically to the minimum, we have provided a supplemental drawing mechanism, which, when the partially-drawn stem reaches a point where the vertical spaces between the successively-  
 90 rising grippers are reduced to such a degree that the leaves and stems tend to come together, engages the stripped part of the stem, carrying it longitudinally inward at a speed greater than that at which it was moved in the  
 95 same direction by the main carrier, and also draws it up through the wipers at a speed greater than that which the main or rotary carrier is capable of giving, said supplemental drawing mechanism serving to abso-  
 100 lutely relieve the butt-end of the stem of any pull strain at its point of connection with the grips as soon as such mechanism engages the said stems.

The supplemental drawing devices com-  
 105 prise a pair of rolls 11<sup>a</sup>, having frictional contact and yielding surfaces, preferably rubber. These rolls are horizontally disposed and are mounted on shafts 2 2, projected from head-blocks 3 3, mounted on a cross-shaft 4,  
 110 fixedly held on the main-frame standards 5 at the inner or discharge end of the wiper or stripper belts, they having transverse and lateral adjustment thereon and held to their adjusted positions by the set-screws 6. The  
 115 meeting or coacting faces of the rolls 11<sup>a</sup> are disposed in a plane directly over the line of the coacting surfaces of the wiper or stripper belts, and the said rolls 11<sup>a</sup> are held at an incline upward, the degree of inclination gov-  
 120 erning the speed at which the stems are moved away from the main carrier, it being obvious that the higher the rolls 11<sup>a</sup> are set the greater will be the aforesaid speed. The front ends of the rolls 11<sup>a</sup> are arranged to  
 125 project or lap over the perimeter of the main carrier and to provide for a close engagement therewith, and yet admit of the free and uninterrupted passage of the grips. The front ends of the rolls 11<sup>a</sup> are made conical, as in-  
 130 dicated by 7 7 and best shown in Fig. 9. The roll 1 receives motion by friction from the roll 1<sup>a</sup>, and the roll 1<sup>a</sup> has a worm-gear portion 8, with a worm-wheel 9, mounted on



a shaft 10, suitably journaled in the main frame and having a chain-gear 10<sup>a</sup>, which receives motion from the chain 16, which also engages an idler 17 and a gear 17<sup>a</sup> on a drive-shaft 18, which shaft is driven by gearing mechanism, particularly referred to in the subjoined detailed description of the feed-device-operating gearing. It should be stated that the rolls 1 1<sup>a</sup> are so geared that their speed of rotation will exceed that of the main carrier.

Referring now more particularly to Fig. 8, it will be seen that as the leaf is carried longitudinally of the wiper-belts and the stem drawn upward the stripped butt-end of the stem will be carried into the entrant end of the supplemental draw-rolls, which by reason of the inclination to the stripper-belts will tend to cause the stem to assume a position at right angles to the line of rotation of such rolls, and in consequence pull the stem, together with the leaf portion adhering thereto, in the direction indicated by the arrow, thereby effecting a sidewise feed of the stem through the wipers and drawing the stem up through the same in a manner precisely like that effected by the main-carrier disk, and as the said rolls 1 1<sup>a</sup> rotate at a speed in excess to the lift sweep of the main carrier it follows that as soon as such rolls 1 1<sup>a</sup> engage the stem the butt-end of the stem is relieved of any pull strain and all danger of its breaking at such point avoided, the danger of the stem breaking at a point midway the butt and wiping points being also reduced to a minimum by reason of the draw strain being constant near the stripping-point and in a substantially direct line. It will also be readily apparent that as the stems are engaged by the supplemental draw-rolls they will maintain a uniform degree of separation, and in consequence be held from bunching, and danger of the stems being crushed or broken being avoided.

While the detailed arrangement of the supplemental drawing devices especially adapts the same for the type of stemming-machine shown, yet it is manifest that the arrangement of such supplemental draw-rolls may be readily modified under the scope of the appended claims to render the same susceptible of use in connection with other leaf feeding and stripping or wiping mechanisms.

The stem-discharge devices in the present case comprise a pair of endless bands 20<sup>c</sup> 21<sup>c</sup>, one of which, 20<sup>c</sup>, passes over a large drive-pulley 22, disposed horizontally at the top of the carrier at one side of its stem-delivery point and mounted on a vertical shaft 23, suitably journaled on the main frame and geared with a worm 24 on a supplemental drive-shaft 25, which worm 24 is also held in mesh with a worm-gear 26 on the rotary carrier-shaft. The belt 20<sup>c</sup> passes over guide-pulleys 27 28, held forward of the stem-delivery point, and a guide-pulley 29, disposed laterally of the rotary carrier and at the stem-discharge point.

30 indicates a second large pulley journaled on a shaft 31, disposed adjacent the pulley 22, opposite the line of stem-discharge. The band 21<sup>c</sup> passes over this pulley 30, over a guide-pulley 32, adjacent the pulley 29, and also over the pulley 28, it passing between the face of the pulley 28 and the belt 20<sup>c</sup>. As will be seen from Fig. 12, the several pulleys and the endless belts are so arranged that the belt 21<sup>c</sup> will be moved by frictional contact with the belt 20<sup>c</sup>, and such belts have portions thereof in the nature of coacting clamp members which form a way extending forward in the direction of the sweep of the stem as it is brought up by the rotary carrier and then laterally to where the two belts separate, where it (the stem) is discharged, suitable deflector or guide plates 33 being provided to prevent the stem being thrown into any of the operating parts of the machine.

To properly guide the stem to its delivery mechanism, a slotted shield 34 may be provided, as shown in Fig. 2.

In the Allison patent before referred to the stripping mechanism comprises two endless belts having coacting faces so arranged as to engage the leaf-stem and effect a wiping action thereon.

To render the complete operation of our invention clear, we have illustrated in detail the construction of the belt mechanism, which is best shown in Figs. 4, 5, and 6 of the drawings, by reference to which it will be seen that the inner rolls 35 and the outer rolls 36 have fixed bearings—that is, they have a fixed relation to each other—and on each pair of rolls 35 and 36 is mounted an endless belt 38, formed of a single member having the card-teeth uniformly arranged in longitudinal rows, the rows on one belt being arranged to alternate with the rows of the other belt, (see Fig. 7,) and such belts in practice are so arranged relatively that under ordinary conditions the ends of the rows of teeth do not extend between each other, but are so arranged as to produce a staggered passage-way, as indicated by the arrow in Fig. 7, so that the stem receives practically a series of successive wipes from opposite directions and is crowded between the teeth in the direction indicated, such operation serving to effect a more complete wiping action on the stem without danger of penetrating or tearing the separated-leaf particles.

By referring now to Figs. 3 and 4 it will be noticed that the belts are mounted loosely on their respective supporting-rolls, for the reason that the upper wiping face or edge X will be brought forward away from its roll-bearing and toward the stem by centrifugal force, and such portion X of the belt will have a yielding bearing by the cushion formed by the rush of air under it, created by the swift movement of the belt and its leaving its seat.

The feed of the belts upon the rolls in the manner shown in Figs. 3, 4, and 5 forms, *per se*, no part of our invention, as the same



is fully disclosed and claimed in the patent granted to A. R. Allison, No. 622,588, dated April 4, 1899. In our form of machine, however, the teeth of the belts are arranged in alternatelines, whereby should for any reason the teeth of one belt be crowded over into the other belt the said teeth would not cross, as is the case in spirally-wound card-clothing wipers. Again, by arranging the teeth of the belt in the manner shown the stem will be caused to take a staggered course through the wiping-surfaces of the belts, as hereinbefore explained.

We have also illustrated in the present drawings means for gathering broken-leaf particles and separating them from the good-leaf particles, and as this mechanism forms the subject-matter of the patent granted to R. W. Coffee, dated April 4, 1899, No. 622,995, the same will be referred to herein only generally. The said mechanism comprises a pair of endless belts 40, held in vertical contact and having their coacting or grip faces 41 arranged in line with the longitudinal movement of the leaf—that is, parallel with the wiping-line of the stripper-rolls. To facilitate the entrance of the leaf, the front ends of the belts are separated, said belts, however, closing together at a point in line with the entrant end of the wiper-belts, whereby to hold the leaf sufficiently tight to carry it along lengthwise of the machine should it become released from the grips of the carrier. The belts 40 pass longitudinally rearward and over the pulleys 42, each having a vertical drive-shaft 42<sup>b</sup> 42<sup>a</sup>, and one of such shafts, 42<sup>a</sup>, has a bevel-gear 43, with which meshes a drive-pinion 44 on a stub-shaft 45, having a drive-pulley 46, driven by a cable 47, which also passes over a pulley 48 on the drive-shaft 18, which drives the supplemental leaf-drawing mechanism. The shaft 42<sup>b</sup> has a chain-wheel 42<sup>c</sup>, with which a drive-chain 48<sup>a</sup> engages and which also engages an idler 49 and a drive-sprocket 50 on the shaft 42<sup>a</sup>.

As the tobacco-leaf portions have a tendency to adhere to the separator-belts, strikers 51 are provided, as clearly shown in Fig. 2, which at intermittent intervals tap the belts and knock off any adhering particles.

In our complete machine blast devices are also employed for separating the perfect-leaf separations from the broken-leaf and stem particles and for deflecting them to one side of the machine, and such blast devices, which are best illustrated in Figs. 1, 4, 5, and 6, comprise a blower *f*, having a blast-conveyer pipe *f'*, that terminates in a discharge-mouth 52, projected under the wiping mechanism and is so arranged as to blow the good-leaf separations into an outlet-chute 53. (See Fig. 4.)

As the detailed arrangement of some of the operating mechanism for the automatic leaf-feeding devices forms a part of our complete machine, a general description thereof is deemed necessary, although broadly the construction and arrangement of the automatic

feed devices herein described, and illustrated in the accompanying drawings, form the subject-matter of Patent No. 624,450, granted to C. E. Buek May 9, 1899.

The automatic feed mechanism comprehends generally a table or bed 60, extended longitudinally forward of the rotary carrier and having an inclined feedway 61 in line with the gripper edge of such carrier, the outer or delivery end of which has a suitable stop or rest member 62, on which the butt-end of the leaf-stem is temporarily lodged in a proper position to project into the path or sweep of the grips, the leaf being held locked in such temporary position by one or more intermittently-operated sweep-arms 63, which at predetermined intervals, governed by actuating mechanism driven from the rotary carrier-shaft, are swung back or released to permit the carrier-grip (which grasps the butt-end of the stem during such backward movement of the sweep-arms) to pull the leaf out of the feedway, previous to which, however, the grips engage and move the rest 62 to an open position to allow the leaf to fall through the table or bed openings. The sweep-arms 63 are projected radially from a shaft 64, journaled longitudinally under the table 60, and are adapted to sweep transversely through slots in the said bed or table 60. The shaft 64 receives motion through the chain belt 65, which engages the operating-shaft 66, journaled at one end on the table-frame and at the other in suitable bearings on the main frame of the machine and adjacent the rear face of the rotary carrier, at which end it has a chain-wheel 67, geared through the chain 68 with a short counter-shaft 69, on which is mounted a tappet-wheel 70, having a plurality of radial tappets 71, which are adapted to be engaged intermittently by a series of cam projections 72 on a cam-wheel 72<sup>b</sup>, having inclined edges 72<sup>a</sup>, mounted on the drive-shaft 18.

In the practical construction of the feeder-actuating mechanism the tappet-wheel and the gear connections between the shaft 69 and the transmitting-shaft 66 and the leaf-sweep-arm shaft is such that the sweep-arm shaft will receive rotation sufficient to actuate one of the sweep-arms to feed a leaf in position for each grip of the carrier as it approaches the delivery end of the feedway. Thus when one of the cams on the cam-wheel 72<sup>b</sup> engages the tappet-wheel it rotates the shafts 69 66 and the shaft 64 sufficient to move one of the sweep-arms to slide the leaf down into the feedway, with its butt-end engaging the rest member 62 and projecting in the path of the carrier-grips. At this point it should be stated that when the leaf is thus fed it is held from passing down by reason of the rest 62; but at this time the cam 72 still engages with the tappet, and in consequence the sweep-arm shaft is still rotating, such further rotation being, however, of a limited extent and for the following purpose: The



sweep-arms have at their outer ends very flexible spring-fingers 76, which bend back and lock against the leaf during the finish of the rotary action of the shaft 64 and during the release of the rest 62, which is effected immediately before the sweep-arms release their pressure on the leaf, such operation being effected by the forward lateral extension of the grip engaging a projection 77 on the front end of the rest-plate 62 (which, it should be stated, is hinged to the feed-table delivery end and held to its normal position by a suitable spring) and throwing it to its open position, to which it is held by the grip during the passing of the same beyond the delivery-opening of the feed-table.

On the sweep-arm shaft 64 is fixedly held a disk 78, having a series of radial notches 78<sup>a</sup>, equal in number to the number of sweep-arms carried by the shaft 64, and suitably supported is a spring 79, held under tension to bear on the peripheral edge of the said disk 78, and which, when any one of the notches comes in proper position, drops therein and imparts a partial reverse motion to the shaft 64 sufficient to throw back the sweep arm or arms pressing down on the leaf, which operation occurs almost simultaneous with the closing of the grip on the butt-end of the leaf, it being understood that the relative arrangement of the said notched disk and the cam and tappet actuating devices is such that the cam disengages the tappet just as the notch of the disk 78 comes into line with the throw-back spring.

The leaves are laid on the table by hand with their butt-end against a front guide-plate 79<sup>a</sup>, after which the entire operation of treating the leaf is automatic.

The leaves as they are separated from their bunches are laid one by one on the feed-table by hand, their butt-ends facing the carrier. The sweep arm or arms then move the leaf in the feedway, where the leaf is momentarily held while one of the grips on the rotary carrier closes on it. The leaf is then hanging pendent, drawn into the entrant end of the wipers, with its tip portions engaging the separator-belts. The carrier as soon as it has entered the leaf between the wipers becomes a stem-drawer, as it pulls the stem up from the wipers. After the stem has been partially stripped it is engaged by the supplemental drawing devices, which finish the stem-drawing operation. The stemmed leaf is then blown out to one side of the machine, while the stem is carried up and delivered at the other side of the machine. Should for any reason the stem break, the part of the leaf and stem below the wipers is separated from the stemmed-leaf particles and carried back and deposited at the rear end of the machine. Thus the good-leaf separations, the broken-stem and adhering-leaf particles, and the stripped stems are each deposited at such different points of the machine that their mixing is rendered absolutely impossible.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In combination with the wiper mechanism and the rotary stem-conveyer and drawing-disk, of supplemental rolls adapted to engage the stem and simultaneously move the said stem laterally and at the same time draw it through the wipers.

2. In a tobacco-stemming machine of the character described, in combination with the wiping mechanism and the rotary carrier arranged to feed the leaves lengthwise between the stripping-faces of the wipers; of supplemental rolls adapted to engage the stem and move it laterally and at the same time draw it between the wiping-faces of the strippers at a speed greater than the draw action of the rotary disk, substantially as shown and described.

3. In a tobacco-stemming machine of the character described, the combination with the wiping mechanism and initial means for drawing the stem therethrough and simultaneously moving it in the direction of the length of the stripping-surfaces of the said wiping mechanism; of supplemental rolls adapted to engage the stem after it has been partially stripped and draw it through the stripping-surfaces at a speed greater than the draw action of the initial stem-drawing means, substantially as shown and described.

4. In a tobacco-stemming machine of the character described; in combination with the wiping mechanism and the rotary leaf-carrier; of means for engaging the stems and holding them separated as they are drawn up through the wipers by the said carrier.

5. In a machine of the character described; in combination with the wipers, a rotary leaf-carrier, said leaf-carrier having clamps to engage the butt-end of the leaf and adapted to carry the stripped stem and discharge it at the upper portion of the machine; the supplemental rolls adapted to engage the stem as it is partially drawn up between the wipers and continue the drawing action of the same to relieve the stem of further pull strain by the carrier-clamp as and for the purposes described.

6. The combination of the wiper mechanism and the rotary leaf-carrier, substantially as shown; of a pair of supplemental rolls having coacting faces, said rolls being arranged at an angle to the wiping-line of the strippers and adapted to engage the stem as it is partially drawn up from the stripper and complete the drawing action as specified.

7. The combination of the stripper, the wiping means, and the rotary carrier; of supplemental rolls arranged to receive the stem as it is partially drawn through the wipers by the rotary carrier, said supplemental rolls being disposed at an angle to the wiping-line of the strippers and means for adjusting the angle of such rolls, substantially as shown and described.



8. In a tobacco-stemming machine; in combination with the wiping mechanism and means for drawing the stem through and laterally along a portion of the length of the wiper-surfaces; of the supplemental leaf drawing and feeding means, operating with the stripping-surfaces and adapted to receive the partially-stripped stem from the initial drawing means and draw it through the wiping-surfaces at an accelerated speed for the purposes specified.

9. In a tobacco-stemming machine, in combination; the stripper mechanism and means for feeding the leaf therebetween and drawing the butt-end of the stem therethrough; of supplemental drawing devices, said devices comprising a pair of positively-rotating rolls arranged at an acute angle to the stripping mechanism and adapted to engage the stripped portion of the stem and simultaneously draw the remaining part of the stem through the stripping mechanism and laterally of the line of wiping-surfaces of the said stripping mechanism, substantially as shown and for the purposes described.

10. A tobacco-stripping machine; comprising wiping mechanism, the rotary carrier projecting at right angles from the coacting surfaces of the wiping mechanism; the leaf-feed for delivering the leaves intermittently to the

carrier, and stem-discharging means adapted to receive the stripped stem from the carrier; the supplemental stem-drawing rolls adapted to draw the outer portion of the stem laterally and at the same time through the stripping mechanism, and an operating gear mechanism driven from the rotary carrier, connecting with the leaf-feed, the stem-discharging devices, and the supplemental drawing-rolls for operating the said several mechanisms.

11. In a tobacco-stemming machine of the character described; the combination with the stripping mechanism and the rotary carrier, said carrier having stem-grips automatically operating to open at predetermined intervals; of stem-discharge means disposed over the rotary carrier, said means comprising a pair of coacting endless belts, and guides for moving the stripped stems into the entrant ends of the said endless belts, said belts having their exits arranged to discharge the stems at right angles to the direction of rotation of the carrier, and means connected with the carrier-shaft for operating the stem-discharging means as specified.

ALPHONSO ROSS ALLISON.

CHARLES E. BUEK.

Witnesses:

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S. S. P. PATTESON.