

No. 640,168.

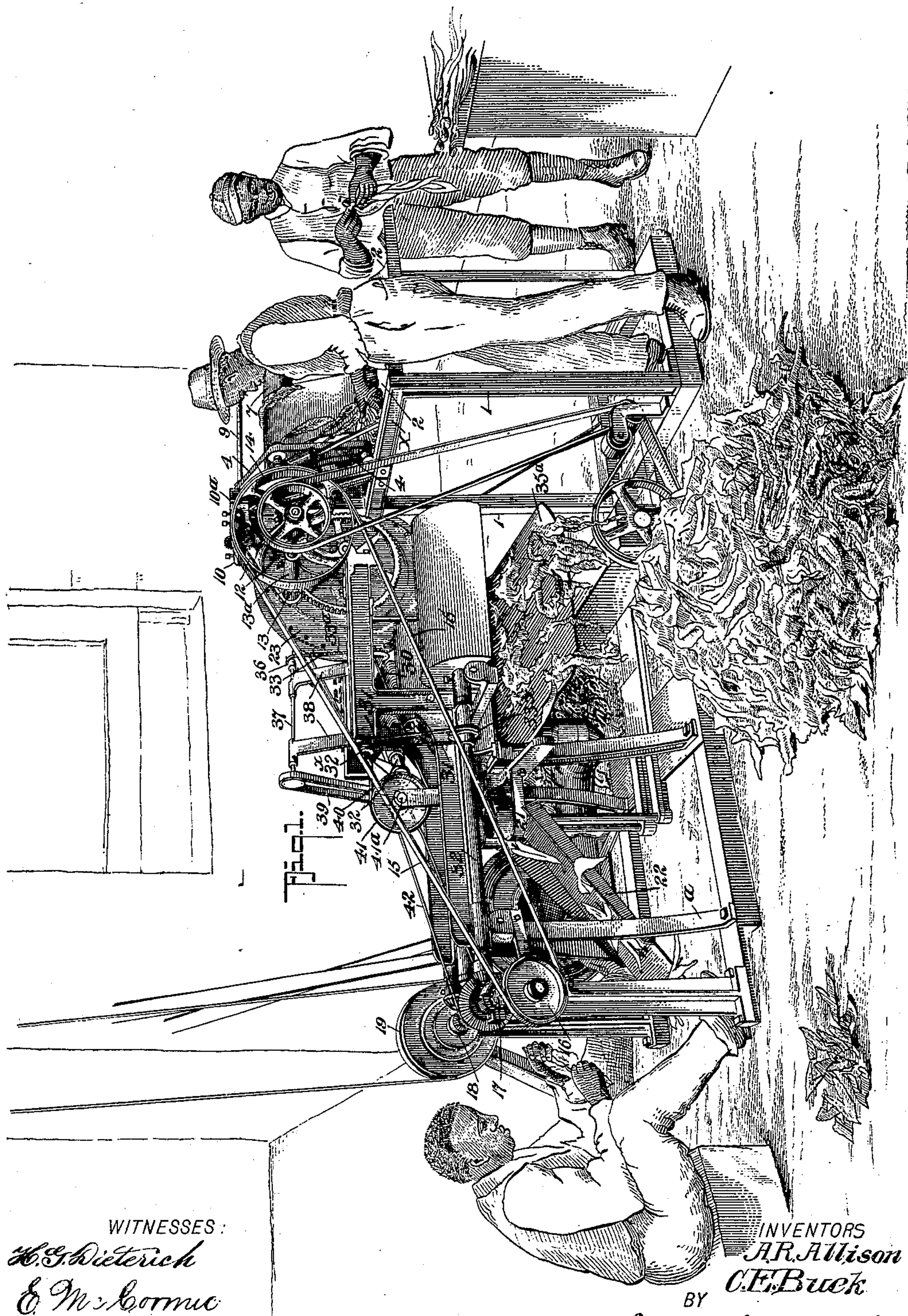
Patented Jan. 2, 1900.

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

(Application filed Jan. 23, 1899.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:  
*H. G. Dietrich*  
*& M. Hornum*

INVENTORS  
*A. R. Allison*  
*C. E. Buek*  
BY  
*Fred G. Dietrich & Co.*  
ATTORNEYS



No. 640,168.

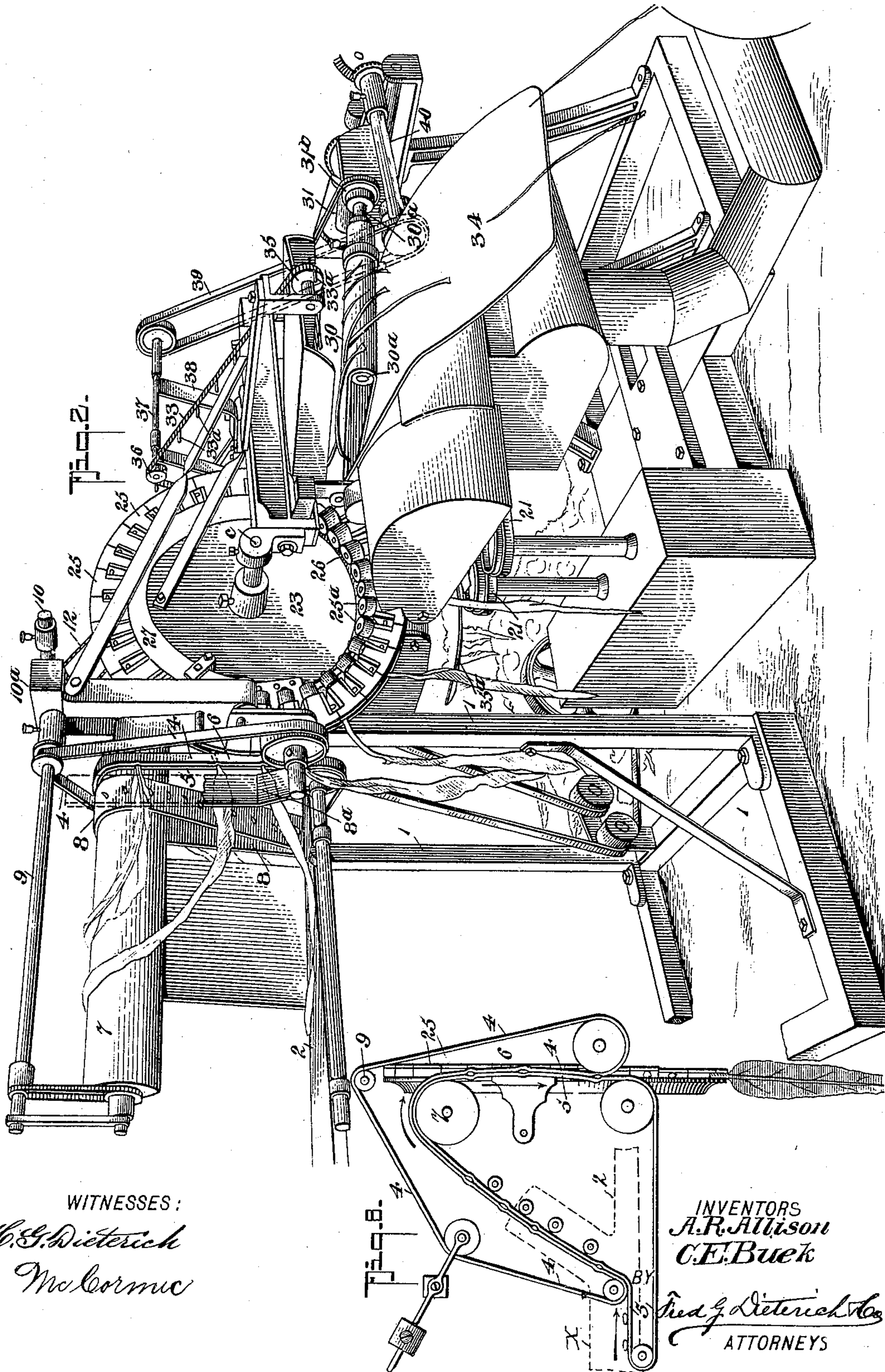
Patented Jan. 2, 1900.

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

(Application filed Jan. 23, 1899.)

(No Model.)

3 Sheets—Sheet 2.



WITNESSES:

*H. G. Dietrich*  
*E. McCormac*

INVENTORS  
*A. R. Allison*  
*C. E. Buek*

*H. G. Dietrich & Co.*  
ATTORNEYS



**No. 640,168.**

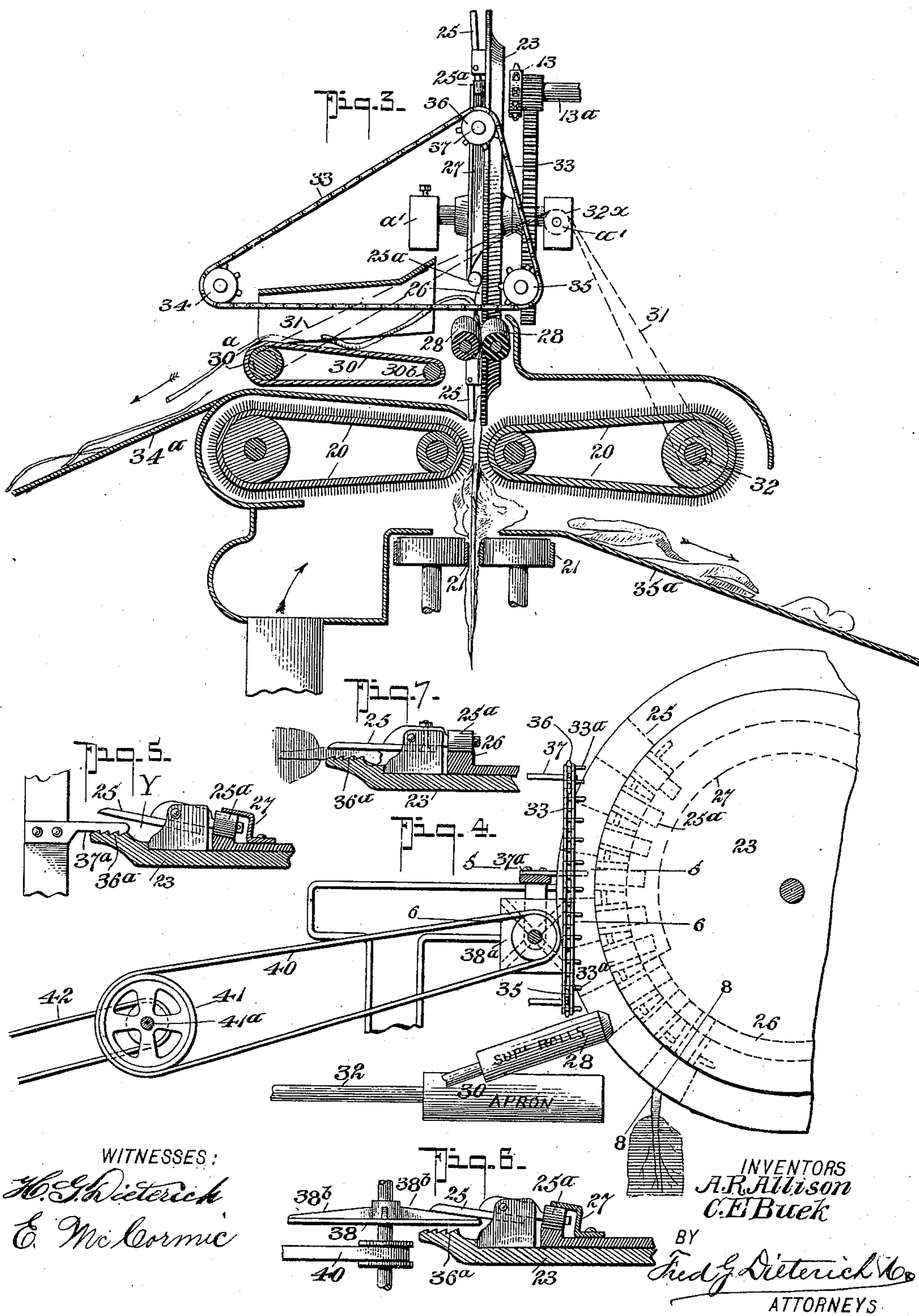
**Patented Jan. 2, 1900.**

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

(Application filed Jan. 23, 1899.)

(No Model.)

**3 Sheets—Sheet 3.**





# 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-LEAF-STEMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,168, dated January 2, 1900.

Application filed January 23, 1899. Serial No. 703,119. (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-Leaf-Stemming Machines, of which the following is a specification.

This invention particularly relates to improvements in the leaf-stemming mechanism disclosed in our copending application, Serial No. 689,856, filed August 30, 1898; and among other objections it seeks to provide a simplified construction of the means for discharging the stripped stems, including special devices for delivering them to one side of the wipers instead of at a point thereover, as in the machine disclosed in our other application, and also in such a manner as to permit their being automatically fed into a set of supplemental wipers, which act to effectively clean off any particles of the leaf adhering to the extreme butt-end of the stem.

Another feature of this invention lies in the detailed construction of the several parts, including the correlation of the feed for conveying the leaf to the rotary combined carrier and drawing wheel, the wipers and the mechanism for operating the parts interdependently, whereby the operating mechanism is rendered the more compact and effective in its uses and the cost of construction thereof greatly reduced over the corresponding operating means disclosed in our other application referred to.

This invention also comprehends an improved construction of cleaner device for positively dislodging the stems from the rotary clamps, also for cleaning the said clamp-surfaces of any adhering particles, the grip portion of the carrier also embodying new features whereby the stem can be the more positively clamped and also the stem dislodged at the place designated for the opening of the clamps.

The invention therefore consists in certain novel details and combinations, which will be first described and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view illustrating

the general arrangement of our invention and the manner of its use. Fig. 2 is a perspective view taken from the opposite side, illustrating more particularly the manner of feeding the leaves to the rotary carrier and how the separated stems are discharged. Fig. 3 is a cross-section illustrating the general arrangement of the wiping mechanism, the rotary carrier, the stem-take-off apron, and the stem-deflector devices. Fig. 4 is a detail face view of a portion of the rotary carrier, illustrating the rotary cleaner, the scraper, and the chain mechanism for dislodging the stem from the open clamps. Fig. 5 is a horizontal section taken on the line 5 5 of Fig. 4. Fig. 6 is a similar view taken on the line 6 6 of Fig. 4. Fig. 7 is a detail view on the line 8 8 of Fig. 4, illustrating one of the stems clamped in position. Fig. 8 is a cross-section of the leaf-feeding devices.

To more clearly illustrate the operation and construction of our improved machine, we shall describe the same in detail, particularly the improved feed device; but we desire it understood that the said improved feed mechanism—that is, the means for delivering the leaf from the hands of the operator to the rotary carrier-wheel—in the broadest sense is the invention of A. R. Allison, and the same forms, therefore, the subject-matter of Patent No. 624,440, dated May 9, 1899.

In its practical construction our improved machine comprises a main supporting-frame *a*, having as a part thereof a pair of horizontal members *a' a'*, upon the forward end of which is fixedly held the rotary carrier-shaft *c*, upon which the disk *23<sup>x</sup>* of the rotary carrier *23*, hereinafter referred to, is fixedly held. At the forward end of the main frame is disposed a supplemental supporting-frame *1*, upon which the leaf-feeding mechanism is mounted, and the said frame *1* is projected at right angles to the plane of movement of the rotary carrier.

In the operation of our machine unskilled labor is employed, and for each machine it is usual to have three persons, hereinafter termed the "helper," being the one who opens the leaf bunches and places them on the feeder-table, the "operator," meaning the one who feeds the leaves to the automatic carrying



or feed mechanism, and the "stemmer," who removes the stem particles from such portion of the leaf as are broken before and during the wiping action and discharged by the separator mechanism, hereinafter again referred to.

The feeding mechanism, which *per se* forms the subject-matter of Patent No. 624,440 to A. R. Allison, before referred to, comprises a suitable bed 2, upon which the leaves are laid by the helper an inclined guideway for supporting the body of the leaf as it is drawn upward, and a pair of endless belts 4 5, having portions in the nature of coacting surfaces, which hold or grip the leaf near the butt-end and carry it into the path of the clamping spaces or rim of the rotary carrier. As clearly shown in Fig. 9, the belts 4 and 5 are so guided and held to form an upwardly-inclined runway in the plane of the guideway 3, they also forming a vertically-extending way 6, which travels at an angle tangent to and in a plane with the rotary carrier and in such close proximity thereto that the projecting ends of the stem-butts will extend into the open spaces between the face of the feed-wheel and the clamp devices of the carrier, as best shown in Figs. 2 and 6.

To facilitate the feed of the leaves, the lowermost belt 5 is extended horizontally in advance of the belt 4, and the same travels in a plane below the adjacent gage member X of the frame 1, such arrangement of parts permitting the butt-end of the leaf to be freely laid on the entrant portion of the feed-belts and to touch the gage member X, which member forms a guide for properly laying the leaves in position.

The belts 4 and 5 are driven through the medium of the large drive and guide roller 7, over which both belts pass, said roller also acting as a guide and driver for the lifting-belt 8, which assists in elevating the body of the leaf up the guide 3.

8<sup>a</sup> indicates a deflector-plate which serves to guide the leaf and keep its butt-end from swinging outwardly as the leaf is being drawn over the top roll 7.

9 indicates a drive-shaft which is geared with the roll 7 and which forms a roller-guide for the upper belt 4, said shaft 9 being also geared with the short shaft 10, running at right angles thereto on the frame-section 10<sup>a</sup>, which shaft 10 receives motion through the medium of a chain belt 12, driven by the chain-wheel 13 on a drive-shaft 13<sup>a</sup>, which carries a large band-wheel 14, connected by the belt 15 with the pulley 16 on the stub-shaft mounted on the outer end of the main frame and driven by a gear 17 on the main drive-shaft 18, which shaft carries fast and loose pulleys 19, as shown in Fig. 1.

20 20 indicate the endless wiper or stripper belts, which have coacting opposing faces, are mounted and operated precisely as described in the other applications hereinbefore referred to, and coact with the rotary carrier and the separator-belts 21 in the same manner

as described in the said other applications. In this case, however, the separator-belts 21, which catch and carry to one side the broken leaf portions not stemmed, do not extend entirely back to the rear end of the machine, but discharge on a suitable chute-board 22, which delivers the broken unstemmed leaf portions to the stemmer to be stemmed by hand, as will be clearly understood by reference to Fig. 1.

The rotary carrier 23 in its general arrangement is the same as in our other machine referred to. In the present case, however, we construct the same with continuous clamping devices on the face of the wheel—that is, the clamp members are so closely arranged as to practically produce a continuous annular clamping-surface. The object in doing this is to provide for quickly and effectively clamping the stem-butts as they are brought into position by the automatic feeding means irrespective of the speed or irregular manner in which the leaves are brought into position to be clamped.

The clamps 25 each consist of a pivotally-mounted clamping member having a roller-bearing 25<sup>a</sup> at the inner end to continuously engage with the fixedly-held cam sector or rim 26 and the inthrow-plate 27.

In the present form the exit end of the plate 27 terminates just about in a plane with the horizontal axial line of the carrier, at which point the cam or sector rim 26 begins, the end of the rim 26 and the entrant end of the plate 27 being in the present case slightly below the horizontal axis of the carrier, the reason of which will presently appear.

So far as described it will be readily apparent that by providing a continuous feed and rotary carrier having practically a continuous clamping-surface the capacity of the machine is only limited by the speed at which the leaves can be delivered to the feeding mechanism, whereas in our former construction of the rotary carrier the clamps are of necessity arranged to clamp the leaves at predetermined intervals on account of the intermittent feeding of the leaves thereto.

28 28 indicate the supplemental rolls, which receive the partially-stripped stem as it is being pulled through the wipers. These rolls in the present machine are arranged, driven, and operated substantially in the same manner as the like rolls in our other machine and for the same purpose.

In the machine particularly illustrated in our application filed August 30, 1898, Serial No. 689,856, the clamps of the carrier maintain their hold on the stem after it (the stem) has been drawn through the supplemental rolls and until it is received by the stem-discharging mechanism located above the carrier. In the present machine the said stem-discharging mechanism is dispensed with and a much simplified means for this purpose provided, which discharges the stem about in a plane with the discharge of the stripped leaf par-



ticles, but in the opposite direction. For this purpose the clamps on the carrier are opened soon after the stem is positively engaged by the supplemental rolls, whereby the butt-end  
 5 of the stems can be deflected sidewise on the offtake-apron 30. The apron 30 is mounted on a pair of rotary shafts 30<sup>a</sup> 30<sup>b</sup>, one of which has a pulley 31<sup>x</sup>, (see Fig. 2,) over which passes a drive-belt 31, which also passes over an  
 10 idler-pulley 32<sup>x</sup> and engages a pulley 33<sup>x</sup> on the drive-shaft 32, which rotates one of the endless wiping and stripper belts, as clearly shown in Fig. 1. The receiving end of the apron 30 is arranged in close proximity to the  
 15 rolls 28, and it is projected as to receive the stem lengthwise as it is dropped thereon, and to cause the stems to positively fall in said direction as they are released from the rolls 28 we provide a transversely-running end-  
 20 less chain belt 33, which passes over the end sprockets 34 35, and a single drive sprocket-wheel 36 on the shaft 37, journaled on an upwardly-extending bracket 38 and driven by a belt 39, in turn driven by the wiper-belt  
 25 drive-shaft 40. The chain belt 33 has a series of laterally-projecting fingers 33<sup>a</sup>, as best shown in Fig. 4, which travel close to the periphery of the feed-wheel and are adapted to engage the stems as they are released from  
 30 the clamp, and are thereby thrown or pulled from the feed-wheel onto the apron 30, which discharges the said stems onto a deflector 34<sup>a</sup>, as shown in Fig. 3.

In the present machine the separating-belts  
 35 21 coact with the wiping-belts, as in the other case, and the blower devices are also employed to blow off the separated-leaf particles onto a deflector-platform 35<sup>a</sup>, as clearly shown in Fig. 3.

40 To keep the clamping-surfaces of the rotary carrier clear of adhering leaf particles, and also to provide for a positive holding of the extreme butt-end of the stem from being drawn out as the leaf is pulled through the  
 45 wipers by the carrier, the inner face of the said carrier-rim is formed with deep annular grooves 36, as indicated in Fig. 8, in which the said extreme end of the stem is squeezed and held by the clamps.

50 To keep the annular grooves of the rim of the rotary carrier clear of adhering leaf particles, a fixedly-held scraper 37<sup>a</sup> is provided, which engages the grooves, (see Fig. 5,) and to likewise keep the grip-faces of the hinged  
 55 clamps clear of adhering leaf particles, we provide a metallic rotary cleaner 38<sup>a</sup>, journaled just below the scraper 37<sup>a</sup>, the perimeter of which is held to rotate within the open clamping-space Y. As the said cleaner ro-  
 60 rotates within the said space Y its front face, which is formed with ribs 38<sup>b</sup>, having rub-

bing-surfaces on an angle parallel with the inclination of the inner faces of the clamps when held to their open position, knocks off  
 any adhering broken-stem particles.

The cleaner is driven by the belt 40, in turn driven by the pulley 41 on the shaft 41<sup>a</sup>, and in turn driven by the belt 42 from the drive-shaft, as shown in Fig. 1.

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

1. The combination in a machine as described with the wiping mechanism, the supplemental rolls and the rotary carrier, said  
 carrier having its stem-clamping means ar-  
 75 ranged to disengage from the stem as the supplemental rolls take it; of means for deflecting the stem as it passes from the supplemental rolls and conveying it to one side of  
 80 the machine.

2. In combination with the wiping mechanism; the supplemental draw-rolls; a rotary carrier, said carrier being arranged to release  
 the stems as they are gripped by the supple-  
 85 mental rolls; of means for deflecting the stripped-leaf particles to one side of the machine, and devices for discharging the stems as they leave the supplemental rolls to the op-  
 90 posite side of the machine.

3. The combination with the wiping mechanism, the carrier and the supplemental rolls, said carrier having its grippers arranged to  
 release the stems as they are engaged by the  
 95 supplemental rolls; of a take-off apron movable outward from the supplemental rolls, and devices for deflecting the stems into the apron as they leave the said rolls.

4. The combination with the wipers, the rotary carrier and the supplemental rolls ar-  
 100 ranged substantially as described; of an endless apron 30, and the transverse traveling stripper-chain 33, having fingers to engage the stems as they pass up from the supple-  
 105 mental rolls, as specified.

5. In a tobacco-leaf-stripping machine, the combination with the leaf-carrier, including grip members having clamping-jaws formed with inclined faces, and means for opening  
 the jaws at predetermined intervals; of a  
 110 cleaner device for engaging the jaws, said cleaner device comprising a rotary body held so its peripheral edge rotates between the jaws of the carrier, said rotary body having  
 115 inclined faces adapted to brush against the inclined faces of the clamp-jaws, as specified.

ALPHONSO ROSS ALLISON.  
 CHARLES E. BUEK.

Witnesses:

J. H. MCGHEE,  
 H. E. MATTHEWS.