

**No. 652,009.**

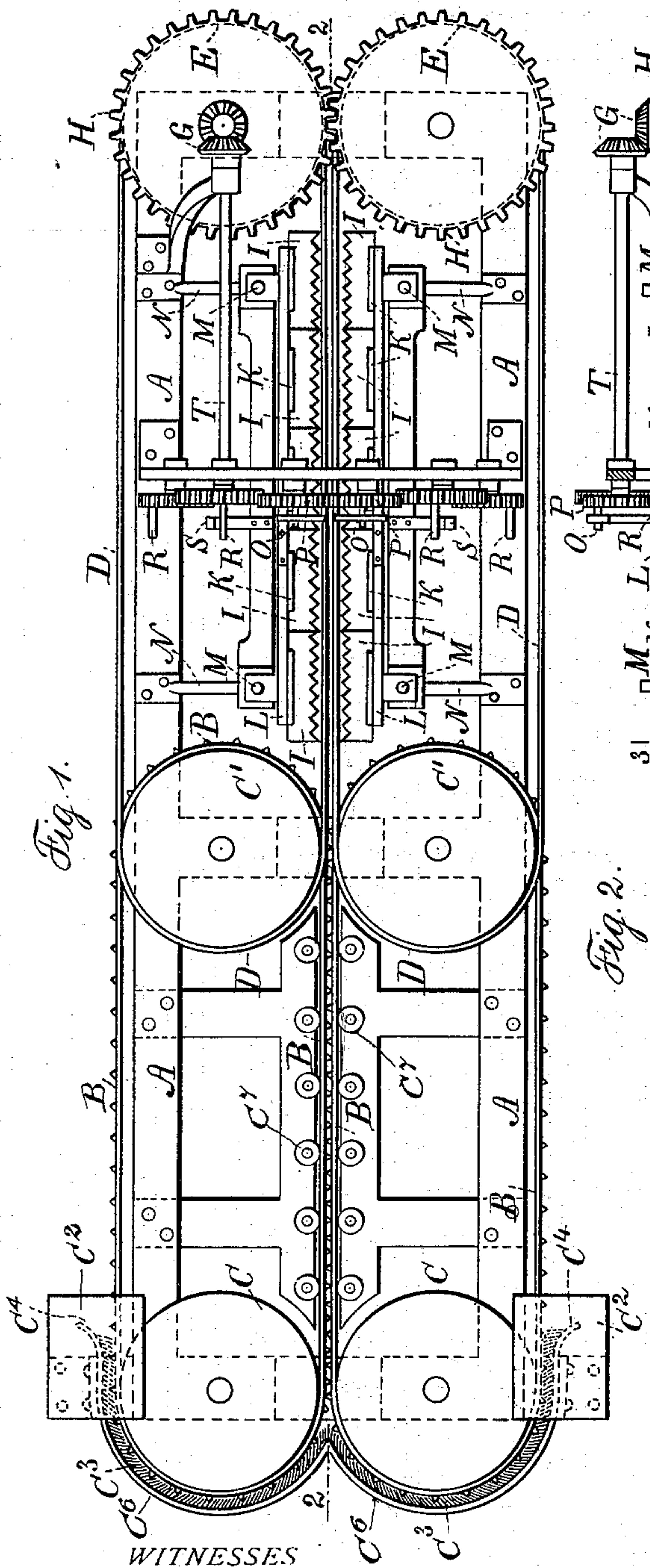
**Patented June 19, 1900.**

**J. E. SCHOOLFIELD & G. M. GUERRANT.**  
**MACHINERY FOR STEMMING TOBACCO.**

(Application filed Mar. 21, 1899.)

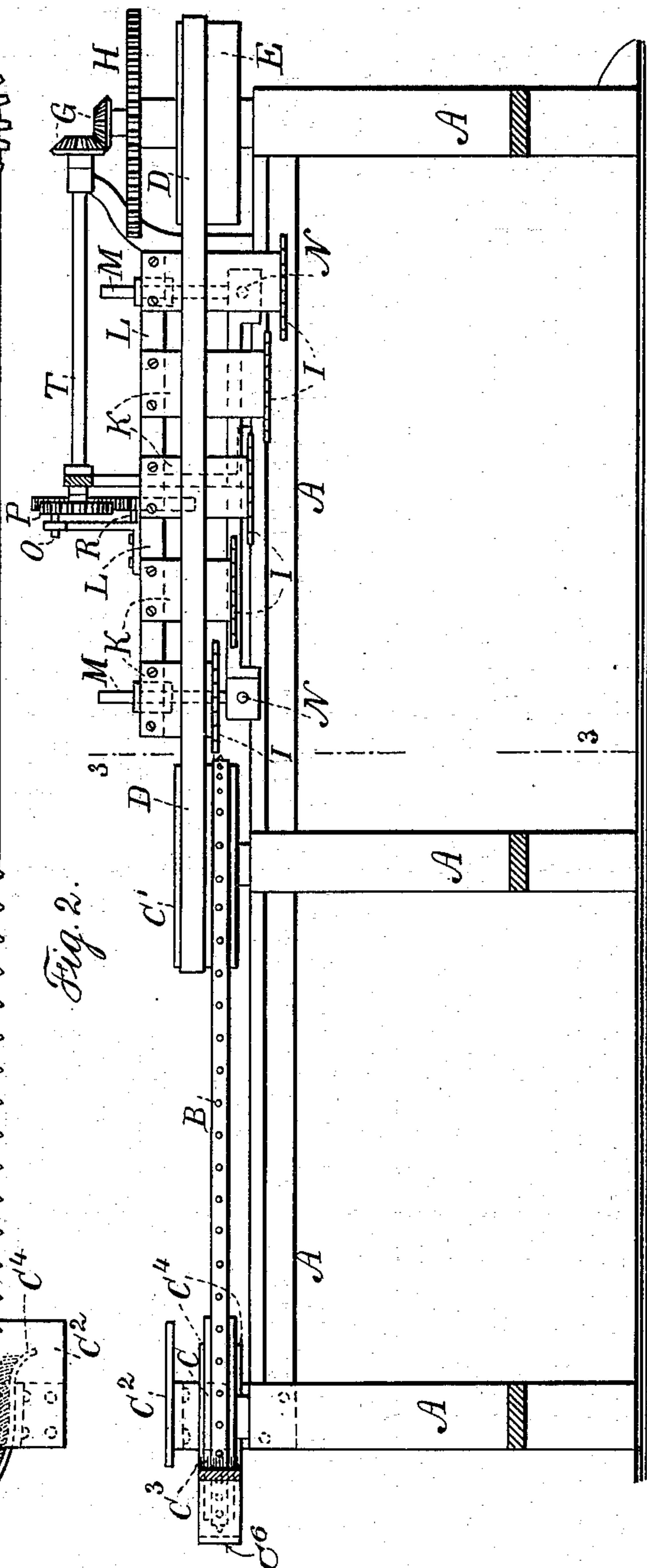
(No Model.)

**2 Sheets—Sheet 1.**



WITNESSES

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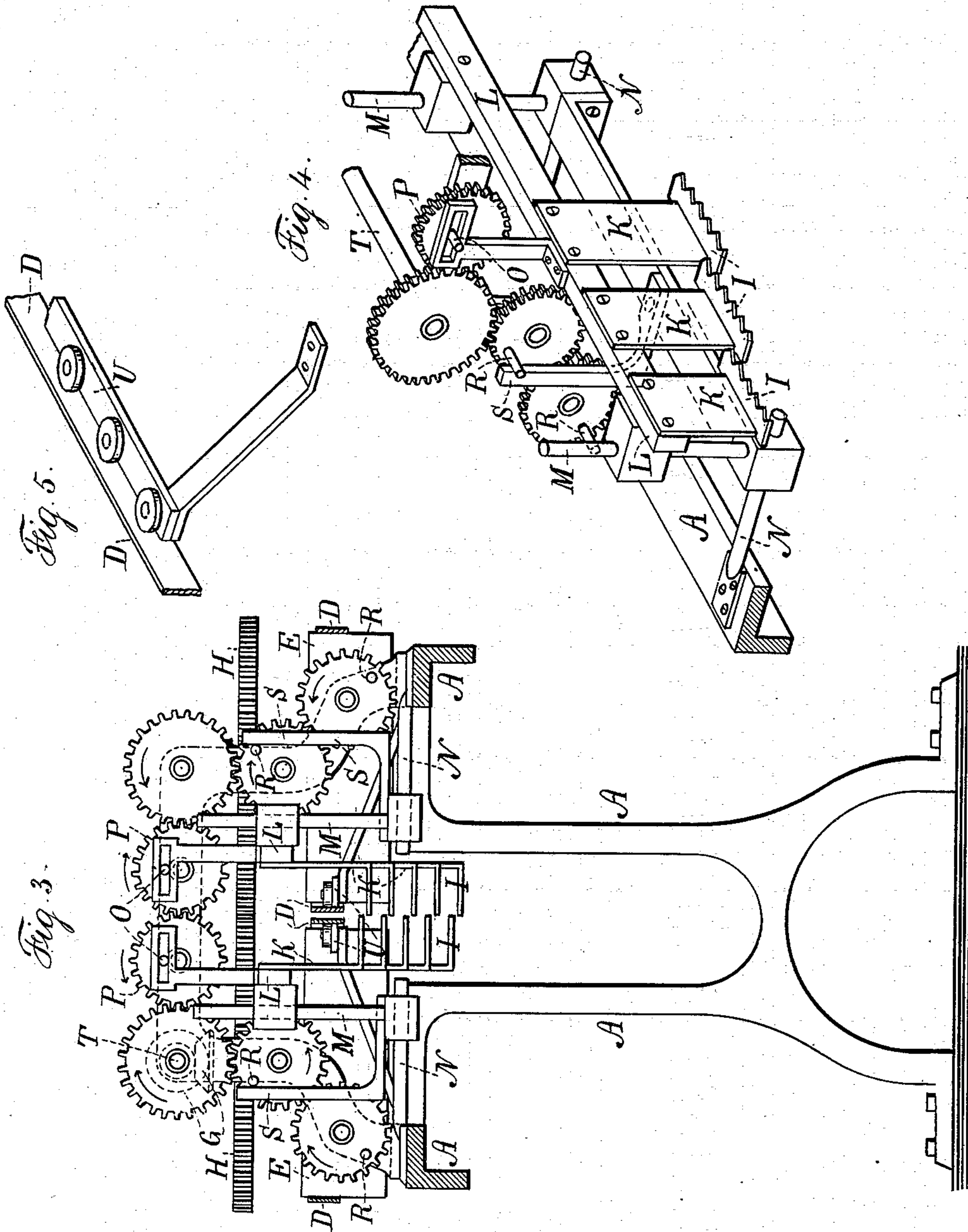
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# UNITED STATES PATENT OFFICE.

JAMES E. SCHOOLFIELD AND GEORGE M. GUERRANT, OF DANVILLE,  
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## MACHINERY FOR STEMMING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 652,009, dated June 19, 1900.

Application filed March 21, 1899. Serial No. 709,934. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES E. SCHOOLFIELD and GEORGE M. GUERRANT, citizens of the United States, residing at Danville, in the  
5 county of Pittsylvania and State of Virginia, have invented an Improvement in Machinery for Stemming Tobacco, of which the following is a specification.

The object of this invention is to seize the  
10 tobacco-leaves by their butts or thicker portions of the stems and carry the same gradually through the machine and expose such leaves to the action of stripping-blades that have a rising-and-falling motion and an opening-and-closing motion, so that the stripping-  
15 blades are drawn apart or opened, raised, and then forced toward each other or closed around the stems of the leaves, and then moved downward to strip off the thinner portions of such leaves, and then the strippers  
20 open and the operations are repeated, and in carrying out this improvement the stripper-blades are advantageously placed in ranges that are gradually lower down, so as to act  
25 first upon the portions of the leaf near the butt of the stem and then as the leaf is carried forward through the machine to act lower down upon the leaf until it is finally separated from the stem, the leaf in this operation hanging vertically.

In the drawings, Figures 1 is a general plan view. Fig. 2 is a longitudinal section at  
2 2, Fig. 1. Fig. 3 is a cross-section in larger size at 3 3, Fig. 2. Fig. 4 is a perspective  
35 view showing some of the strippers and the devices for actuating the same, and Fig. 5 illustrates the devices that press upon the belts to cause them to hold the stems.

The frame A is made with two side portions  
40 and an open center portion to allow the leaves to hang freely in such open center portion, and the feed-belts B B are upon horizontal pulleys C C', and we find it advantageous to use a second set of feed-belts D, which are  
45 above the first set B, the pulleys C' being common for the two sets of belts, and at the distant end of the machine the belts D pass around the pulleys E, and any suitable mechanism is employed for driving the pulleys and  
50 belts. We have shown the bevel-gears G for

giving motion to the shaft of one of the pulleys E and straight gearing H for connecting the shafts of the respective pulleys.

C<sup>3</sup> represents stationary segmental brushes supported in any desired manner from the  
55 frame of the machine. These brushes project from and are preferably held in place by suitable backing C<sup>6</sup>, and the free ends of said backing are bent outwardly at C<sup>4</sup> to form mouths, into which the bunches of tobacco are passed  
60 with the butt-ends upward. Said brushes act to detain the tobacco as carried forward by the belts, and the bunches are opened out and the leaves separated, so that the leaves pass  
65 singly in between the feed-belts B B and hang vertically from said belts. These feed-belts are provided with pins that pass into and engage the thicker portions of the stems, and said belts B B carry the leaves forward, with  
70 part of the butt-ends projecting sufficiently above said belts so as to be taken by the belts D when such butts arrive at said belts. In order that the butts of the tobacco-leaves may stand at the proper height above the  
75 feeding-belts B B, we provide a horizontal plate C<sup>2</sup> above each mouth C<sup>4</sup> of the brushes. The operator in feeding the tobacco into the mouth C<sup>4</sup> places the butts of the leaves against the under side of the plate C<sup>2</sup>. Hence said  
80 plate acts as a gage and determines the height at which the butts project above the belts B B.

We have shown the brushes as adjacent to both pulleys C C and with two mouths C<sup>4</sup> in order that the tobacco may be fed from either  
85 side of the machine or from both sides at once; but it is evident that this feeding device will work equally well when the brush is adjacent to and encircles part of only one of the pulleys C. Any suitable device may be  
90 employed for pressing the two adjacent parts of the belts B B toward each other, so as to insure the butts of the tobacco-leaves being firmly held by said belts. We have shown  
95 in Fig. 1 only rollers C<sup>7</sup>, supported from the frame of the machine, for accomplishing said object.

The stripping-blades I are approximately similar to saws, notched on their edges and  
in two groups, one on each side of the leaves  
100 as they hang, and these stripping-blades are



fastened to vertical plates K, that are connected at their upper ends to the longitudinal bars L, and these bars are upon slides that surround and are free to be moved up and down upon the vertical studs or columns M, and these studs or columns are upon a base-bar that is supported upon horizontal slides N, so that the respective groups of strippers can not only be moved up and down, but be moved toward or from each other.

Any suitable mechanism may be employed for raising and lowering the strippers and for bringing them toward each other or apart to open them from the leaves. We have, however, represented crank-pins O upon gear-wheels P, acting upon horizontal slotted bars connected with the bars L for raising and lowering the sets of strippers, and we have also shown crank-pins R, that act upon vertical bars S to press the strippers toward each other or to draw them back, and these crank-pins can be revolved by suitable mechanism. We have represented gear-wheels for this purpose receiving their motion from the shaft T, to which suitable power is to be applied.

It is advantageous to construct the stripping-plates so that one passes slightly above the other in order that the stems may be received into the notches of the plates and the plates close around such stems sufficiently for scraping the thinner leaf portions from the stems, and by providing spring-plates, to which the stripper-plates are connected, these yield to any unusual thickness of stem or group of stems, so as not to cut the stems in the stemming operation, and these stripper-plates being at successively lower levels commence to act upon the tobacco at the upper and larger ends of the stems, and as the tobacco-leaves are carried along through the machine they are exposed to the action of stripper-plates that are lower down until the leaf is finally removed entirely from the stem.

It is important that the belts D should hold the stems with sufficient firmness to prevent the strippers drawing the stems down from between the belts, and with this object in view longitudinal bars U are provided behind the belts with rollers upon the bars acting against the backs of the belts to keep one belt toward the other. (See perspective view, Fig. 5.)

While it is generally advantageous to have the stripping-plates separate and substantially horizontal, we do not limit ourselves in this particular so long as the strippers lap sufficiently for the stems to be in the notches and embraced by the strippers as such strippers are moved toward each other and before they are moved downward.

We have shown the belts B as close together to receive the stems of the leaves between them. In an application filed March 21, 1899, Serial No. 709,933, we have shown a tubular belt between the feeding-belts. Either form of feed may be used in either machine.

We claim as our invention—

1. The combination with feeding-belts for carrying the leaves through the machine with the stems substantially vertical and the butts or thicker portions of the stems uppermost, of strippers in the form of plates having notched edges and arranged at each side of the feeding-belts, the notched edges being at successively-lower levels and means for communicating to such strippers an up-and-down movement and a forward-and-backward movement, so that the strippers ascend out of contact with the leaves and are closed against the leaves, moved downward to strip the same and opened to separate the strippers from the leaves as they return to the higher elevation, substantially as set forth.

2. The combination with feeding-belts for carrying the leaves through the machine with the stems substantially vertical and the butts or thicker portions of the stems uppermost, of strippers in the form of notched horizontal plates arranged in two oppositely-placed groups, one at each side of the feeding-belts, the plates of each group being at successively-lower levels, and means for communicating to such strippers an up-and-down movement and a forward-and-backward movement, so that the strippers ascend out of contact with the leaves and are closed against the leaves, moved downward to strip the same and opened to separate the strippers from the leaves as they return to the higher elevation, substantially as set forth.

3. In a machine for stemming tobacco, a pair of feeding-belts between which the thicker portions of the stems are received, means for pressing such belts against the stems, of strippers in the form of notched, horizontal plates arranged in two oppositely-placed groups, one at each side of the feeding-belts, the plates of each group being at successively-lower levels and means for reciprocating such stripper-plates and for forcing them against the leaves and for drawing them back from such leaves, substantially as set forth.

4. The combination in a machine for stemming tobacco, of feeding-belts between which the stems of the leaves are received with their thicker ends upward, means for pressing the belts against the stems, of strippers in the form of notched horizontal plates arranged in two oppositely-placed groups, one at each side of the feeding-belts, the plates of each group being at successively-lower levels, and spring-plates for carrying the stripper-plates and means for reciprocating such stripper-plates to open and close the same and for forcing them against the leaves and for drawing them back from such leaves, substantially as set forth.

5. In a tobacco-stemming machine, the combination with the feeding-belts, of strippers in the form of notched horizontal plates arranged in two oppositely-placed groups, one at each side of the feeding-belts, the



plates of each group being at successively-lower levels, spring-plates for supporting the same, bars with which such spring-plates are connected, gearing and cranks for raising and lowering the bars and for pressing the strippers toward each other and for withdrawing them from contact with the leaves, substantially as set forth.

6. The combination in a tobacco-stemming machine, of means for seizing the stems and carrying the leaves through the machine, and of strippers in the form of notched horizontal plates arranged in two oppositely-placed groups, one at each side of the feeding-belts, the plates of each group being at successively-lower levels, and means for reciprocating the same in the direction of the stems of the leaves and means for pressing the strippers against the leaves before they commence to reciprocate from the butts of the leaves toward the points and then for drawing back such strippers before reciprocating in the other direction, substantially as specified.

7. In a machine for stemming tobacco, the combination with a pair of feeding-belts between which the thicker portions of the stems are received, and means for pressing such belts against the stems, of the notched horizontal stripper-plates I arranged in two groups, one at each side of the feeding-belts, the plates of each group being at successively-lower levels, the bars L and spring-plates K for supporting said notched plates, the guides M, gearing P, crank-pins R and vertical bars S for reciprocating the notched plates, substantially as and for the purposes set forth.

8. In a machine for stemming tobacco, the combination with a pair of feeding-belts between which the thicker portions of the stems are received, and means for pressing such belts against the stems, of the notched horizontal stripper-plates I arranged in two groups, one at each side of the feeding-belts, the plates of each group being at successively-lower levels, the bars L and spring-plates K for supporting said notched plates, the guides M and N, gearing P, crank-pins O and R and bars against which the crank-pins act for reciprocating and raising and lowering the stripper-plates, substantially as set forth.

9. In a machine for stemming tobacco, the combination with the feeding-belts D, and means for pressing such belts against the stems of the leaves, of a group of plates K of varying lengths at either side of the feeding-belts, horizontal stripper-plates attached to the plates K and having notched edges op-

positely placed, bars L to each of which one entire group of stripper-plates are connected, vertical supports on which said bars slide, a slotted arm rising from each of the bars L, pins in said slots and means for actuating said pins and slotted arms to impart an up-and-down movement to the stripper-plates, substantially as specified.

10. In a machine for stemming tobacco, the combination with the feeding-belts for carrying the leaves into the machine with the stems substantially vertical, pulleys around which said belts pass and means for driving said pulleys and belts, of stationary segmental brushes adjacent to and partially encircling the outer pair of said pulleys and between which brushes and belts the bunches of tobacco are fed, substantially as specified.

11. In a machine for stemming tobacco, the combination with the feeding-belts for carrying the leaves into the machine with the stems substantially vertical, pulleys for said belts and means for driving said pulleys and belts, of segmental brushes partially encircling the outer pair of said pulleys and horizontal gage-plates C to determine the height that the stems project above the feeding-belts, substantially as specified.

12. In a machine for stemming tobacco, the combination with the feeding-belts for carrying the leaves into the machine with the stems substantially vertical, pulleys around which said belts pass and means for driving said pulleys and belts, of a brush at the feeding end of the machine adjacent to and partially encircling one of the outer pairs of said pulleys and between which brush and the belt the tobacco is fed, substantially as specified.

13. In a machine for stemming tobacco, the combination with the feeding-belts for carrying the leaves into the machine with the stems substantially vertical, pulleys around which said belts pass and means for driving said pulleys and belts, of a brush at the feeding end of the machine adjacent to and partially encircling one of the outer pairs of said pulleys, and between which brush and the belt the tobacco is fed, and a horizontal gage-plate to determine the height that the stems project above the brush, substantially as specified.

Signed by us this 15th day of March, 1899.

JAMES E. SCHOOLFIELD.

GEO. M. GUERRANT.

Witnesses:

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ROBT. JAMIESON.