

No. 731,183.

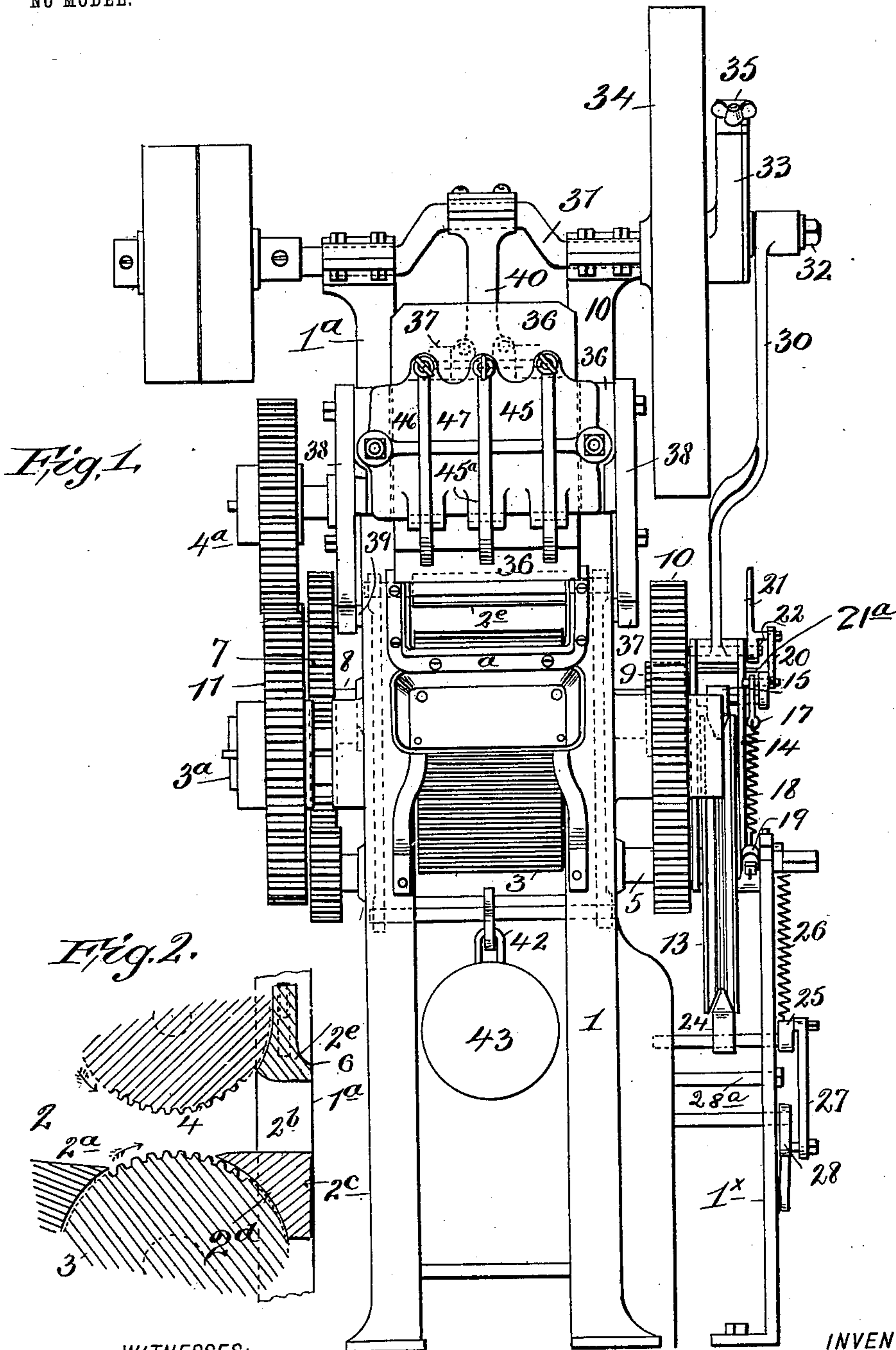
PATENTED JUNE 16, 1903.

M. HIMOFF.  
TOBACCO CUTTING MACHINE.

APPLICATION FILED OCT. 26, 1902.

2 SHEETS—SHEET 1.

NO MODEL.



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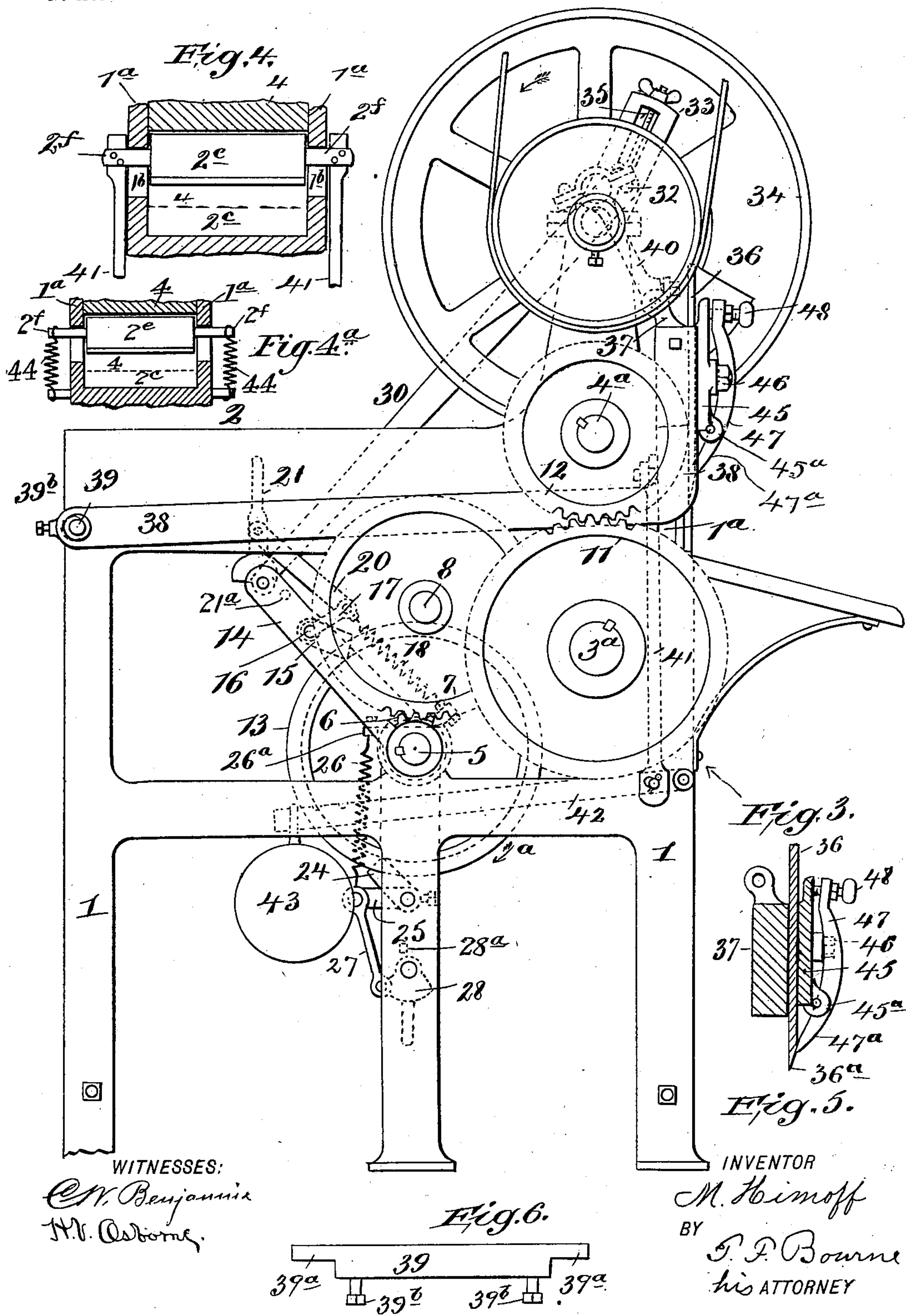
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TOBACCO CUTTING MACHINE.

APPLICATION FILED OCT. 25, 1902.

NO MODEL.

2 SHEETS—SHEET 2.





# UNITED STATES PATENT OFFICE.

MAX HIMOFF, OF NEW YORK, N. Y.

## TOBACCO-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 731,183, dated June 16, 1903.

Application filed October 25, 1902. Serial No. 128,710. (No model.)

*To all whom it may concern:*

Be it known that I, MAX HIMOFF, a citizen of the United States, and a resident of New York city, borough of Manhattan, New York, have invented certain new and useful Improvements in Tobacco-Cutting Machines, of which the following is a specification.

My invention relates to machines for cutting tobacco wherein the tobacco-leaves are placed in a feed trough or box and are fed forwardly to a reciprocating knife; and my invention comprises the novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a front elevation of a tobacco-cutting machine embodying my invention. Fig. 2 is a detail sectional view of the feeding-rolls and the guide or mouth for the tobacco adjacent thereto. Fig. 3 is a side elevation of the machine. Fig. 4 is a detail sectional view at right angles to Fig. 2, showing the movable member at the mouth of the feeding-trough. Fig. 4<sup>a</sup> is a similar view showing a modification. Fig. 5 is a detail sectional view through the knife-holder, and Fig. 6 is a detail view of the shaft that carries the arms of the knife-holder.

Similar characters of reference indicate corresponding parts in the several views.

In the drawings the numeral 1 indicates a main frame, which may be of suitable or usual construction, and the same is provided with a trough (indicated at 2) in which the tobacco-leaves to be cut are placed. At the forward end of trough 2 are located feed-rolls 3 4, opposed to each other, between which the tobacco is fed forwardly to the mouth or open end of the trough, (see Fig. 2,) the bottom 2<sup>a</sup> of the trough extending close to the roll 3. The rolls 3 4 are carried by shafts 3<sup>a</sup> 4<sup>a</sup>, respectively, suitably journaled in frame 1 and are rotated so that their opposed surfaces travel in the same direction, as indicated by the arrows in Fig. 2, for feeding the tobacco-leaves from the trough to the cutting knife or blade.

While any suitable means may be provided for rotating the rolls 3 and 4, I have shown for the purpose gearing arranged as follows:

A shaft 5, suitably journaled in frame 1, carries a pinion 6, meshing with a gear 7, carried by a shaft 8, journaled in frame 1, and said shaft 8 at the side of the machine opposite gear 7 carries a pinion 9, that meshes with a gear 10, secured to the shaft 3<sup>a</sup> of roll 3. At the end of said shaft 3<sup>a</sup> opposite gear 10 is secured a gear 11, which meshes with gear 12, secured to the shaft 4<sup>a</sup>, all whereby through said gearing as shaft 5 is rotated the rolls 3 and 4 will be rotated at the desired peripheral speed. As the knife or blade for cutting the tobacco reciprocates and cuts during one stroke only, I have shown means for intermittently rotating the rolls 3 and 4 through said gearing, which means are arranged as follows: To the shaft 5 is secured a friction drum or wheel 13, preferably having a grooved periphery, and concentric with or upon the shaft 5 is journaled a rocker-arm 14, which may be made in the form of a fork straddling the drum 13, (see Fig. 1,) which rocker-arm carries a dog 15, adapted to bear upon drum 13 to make frictional contact therewith for rotating said drum. I provide a spring for maintaining the dog 15 in contact with drum 13, and in the arrangement shown the dog 15 is pivotally supported on arm 14, as at 16, and is connected with an arm 17, to which a spring 18 is connected, the opposite end of said spring being connected to a support, as at 19. In order to hold the dog 15 out of engagement with drum 13 when desired, I have shown the arm 17 connected by a link 20 with a lever 21, that is pivotally connected with rocker-arm 14, as at 22. Thus when lever 21 is swung sufficiently far to the left in Fig. 3 to engage a stop 21<sup>a</sup> on arm 14 the dog 15 will be raised from drum 13 and the parts will be held in that position, because the change of position of the parts causes their pivots to assume such relative positions that the spring 18 will not draw the lever 21 back. By next pushing the lever 21 to the right in Fig. 3 the dog will be brought into contact with drum 13. Reverse motion of drum 13 is prevented by means of a dog 24, pivotally carried by frame 1 and adapted to bear against drum 13, an arm 25 being connected with said dog and drawn by a spring 26, connected therewith and with a support, as at 26<sup>a</sup>, to maintain the dog in contact with



drum 13. The arm 25 is connected by a link 27 with a crank-arm 28, pivotally supported by a frame 1 or a standard 1<sup>x</sup>, the arrangement of the pivots being such that when arm 28 is moved to the right in Fig. 3 to engage a stop 28<sup>a</sup>, connected with frame 1 or standard 1<sup>x</sup>, the dog 24 will be drawn out of engagement with drum 13 and held in such position by the change of the relative positions of the pivots of the parts 25 27 28, and when the arm 28 is moved to the left in Fig. 3 the spring will restore the parts to the positions there shown.

From the foregoing it will be apparent that when arm 14 is rocked or oscillated the drum 13 will be rotated in the direction of the arrow *a* in Fig. 3 intermittently or step by step, whereby similar motion is communicated through the gearing to the rolls 3 and 4.

The means I have shown for rocking arm 14 comprise a link 30, connected therewith and extending to the crank-shaft 31, which is suitably journaled in frame 1, and the link 30 is eccentrically connected with said shaft to give the desired motion to arm 14, as by means of a pivot 32, connected with a crank 33, extending from shaft 31 or from the side of the fly-wheel 34, secured to said shaft, and means may be provided for adjusting the pivot 32 along the crank 33 for regulating the movement or stroke of arm 14—as, for instance, by means of a screw 35, connected with the pivot 32 in well-known manner.

The knife 36 for cutting or slivering the tobacco-leaves that are fed by the rolls 3 and 4 is carried by a reciprocative knife-holder 37, which is shown in the form of a plate or block carried by parallel arms 38, that extend along opposite sides of trough 2 and are adapted to oscillate on a shaft 39, carried by frame 1. The knife or blade 36 is so carried as to reciprocate in front of the mouth 2<sup>b</sup> of the trough and in front of the vertical bars 1<sup>a</sup> of frame 1, the tobacco being fed from trough 2 between said bars. Around the mouth 2<sup>b</sup> and secured to bars 1<sup>a</sup> and bridge 2<sup>c</sup> I place a metal guard *a*, as indicated in Fig. 1, and along which the cutting edge of blade 36 travels, the lower member of which guard serves as a stationary knife to coact with blade 36. The knife-holder 37 is connected by a link 40 with the crank-shaft 31, so that as the shaft rotates the holder 37 will be reciprocated vertically, the knife-holder being guided or traveling between the bars 1<sup>a</sup>. At the lower part of the mouth 2<sup>b</sup> is located a bridge or ledge 2<sup>c</sup>, disposed between and carried by bars 1<sup>a</sup>, over which the tobacco passes. (See Fig. 2.) The inner surface of the bridge 2<sup>c</sup>, as at 2<sup>d</sup>, is curved to correspond with the periphery of roll 3, which fits so as to rotate thereunder. Above the bridge 2<sup>c</sup> and guided by the bars 1<sup>a</sup> is a reciprocative presser 2<sup>e</sup>, adapted to bear upon the tobacco at the mouth 2<sup>b</sup> to press the same firmly adjacent to the blade 36. I have shown the presser 2<sup>e</sup> as provided with extensions 2<sup>f</sup>, guided in

slots 1<sup>b</sup> in bars 1<sup>a</sup> and connected by links 41 with a reverse 42, upon which a weight 43 is hung adjustably, whereby uniform downward pressure may be maintained by the presser 2<sup>e</sup> upon the tobacco. For small machines I may dispense with the links 41, lever 42, and weight 43 and maintain a downward pressure upon presser 2<sup>e</sup> by springs 44, connected therewith and with the bars 1<sup>a</sup>, as shown in Fig. 4<sup>a</sup>. The arrangement is such that as the tobacco-leaves pass to the mouth 2<sup>b</sup> from the rolls 3 4 the presser may rise or fall, as required, according to the quantity of tobacco passing, and will hold the tobacco firmly upon the bridge 2<sup>c</sup> as the knife or blade 36 reciprocates.

To hold the knife or blade 36 firmly upon the holder 37, I provide a plate or bar 45, adapted to be held to the knife-holder 37, as by screws or bolts 46, and for the purpose of making a fine adjustment of the knife relatively to the stationary knife I provide levers 47, pivoted to plates 45, as by means of lugs 45<sup>a</sup> thereon, the pivots of the levers being near the cutting edge 36<sup>a</sup> of blade 36, the levers 47 having long arms extended upwardly and their short arms 47<sup>a</sup> adapted to bear against the knife-blade 36. (See Fig. 5.) The levers 47 may be adjusted for the required pressure upon the blade 36 by means of screws 48, meshing in threaded holes in said levers and bearing against the plate 45. By this means a fine adjustment of the blade with relation to the stationary knife or edge may be made, and as the blade wears away adjustment thereof may be readily made. In order to adjust the blade bodily toward the cutting edge *a*, I have shown the shaft 39, that carries the levers 38, provided with eccentric pivots or gudgeons 39<sup>a</sup>, upon which the levers 38 are journaled, whereby shaft 39 may be rotated in its bearings, which will cause the pivots 39<sup>a</sup> to move levers 38 longitudinally, and thereby adjust the blade 36 with respect to the cutting edge *a*. Screws 39<sup>b</sup>, carried by a main frame 1, are provided to hold the shaft 39 rigidly when adjusted.

The operation of the machine is as follows: The tobacco being placed in trough 2 and between the rolls 3 4 in well known manner is fed forwardly by said rolls between the bridge 2<sup>c</sup> and the presser 2<sup>e</sup>, and the machine being operated the blade 36 is reciprocated in front of the mouth of the trough, and the position of the parts is such that as crank-shaft 31 rotates in the direction of the arrow in Fig. 3 the knife-holder will be depressed, carrying the blade 36 downwardly and cutting tobacco that projects from the mouth of the trough, during which time the rocker-arm 14 moves to the left in Fig. 3 and the rolls 3 4 remain at rest. As the knife-holder and the blade are next raised by the crank-shaft the arm 14 will be moved to the right in Fig. 3 to rotate the drum 13, and thereby the gearing will cause rolls 3 4 to rotate sufficiently to feed the desired amount of tobacco to the



mouth in position to be cut by the next descent of the blade 36, and so on, the blade 36 cutting the tobacco on the downstroke and the tobacco being fed intermittently by the rolls 3 4.

Changes may be made in the details of construction and the arrangement of the parts and the tobacco could be pushed from the trough under the knife by hand, thereby dispensing with the feeding-rolls and their operating parts, without departing from the spirit of my invention.

Having now described my invention, what I claim is—

15 1. A tobacco-cutting machine comprising a main frame, a trough for tobacco, a pair of opposed feeding-rolls adjacent to the mouth of the trough and journaled in the frame to maintain an equal distance between their opposed surfaces, a stationary cutter at the mouth of the trough adjacent to the lower roll, a movable presser above said stationary cutter adjacent to the upper stationary roll, means for guiding said presser in said frame independent of said rolls, means for pressing down said presser, a knife-holder adapted to carry a knife across the mouth of said trough, and means for supporting and for operating said knife-holder, substantially as described.

30 2. In a tobacco-cutting machine the combination of a frame having a trough provided with a mouth for the passage of tobacco, a knife-holder provided with a plate or bar adapted to hold a knife or blade to the holder, a lever pivotally carried by said plate and having one end adapted to bear upon the

blade, means connected with said lever for causing the same to press upon the blade and means for supporting and operating said knife-holder, substantially as described. 40

3. In a tobacco-cutting machine the combination of a frame provided with a trough for tobacco having a mouth, a knife-holder, a plate or bar adapted to be secured thereto and arranged to hold a blade to the holder, a lever pivotally carried by said plate and having one end adapted to bear upon the blade and a screw at the other end adapted to act with said plate to cause the lever to press upon the blade, and means for supporting and operating said knife-holder substantially as described. 50

4. In a tobacco-cutting machine the combination of a frame having a trough provided with a mouth, a pair of feeding-rolls adjacent to the mouth of said trough, a knife-holder adapted to carry a knife across said mouth, means for supporting and operating said knife-holder, gearing for operating said rolls, a drum connected with said gearing, a rocker-arm provided with a dog to operate said drum, means for rocking said arm, a lever connected with said dog, and a spring connected with said lever, the pivots between the dog and said lever being arranged to have their normal operative positions changed to maintain the dog out of engagement with the drum, substantially as described. 65

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Witnesses:

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